EXAMINING THE PRACTICE OF INFORMATION LITERACY TEACHING AND LEARNING IN UPPER SECONDARY SCHOOLS IN VIETNAM

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ABSTRACT

This study aims to investigate the practice of information literacy (IL) teaching and learning in Vietnam's upper secondary schools. The research employed a mixed-methods multiple case study approach, including three phases of data collection. It started with a paper questionnaire to investigate students' IL level and their self-assessment of that ability. This was followed by student interviews. The third phase included professional interviews (librarians, teachers, administrators) and an analysis of documents (including educational projects, reports, teachers' resources and textbooks). An expanded version of the Standards for the 21st-Century Learner (AASL, 2007) which contains four original standards and an additional standard was used as a theoretical framework for the study. A pilot study was conducted at an upper secondary school in Vietnam in order to set up suggestions for the main study. The main study was then carried out in two upper secondary schools. The research indicates that more works need to be done to improve students' IL, especially information evaluation skill. A number of factors affecting students' IL were explored, including internal and external factors. Although several reasons were identified to explain the difference of students' IL scores, the use of technology had no impact on their IL capability. The weakness of students' IL capability might result from the absence of IL programmes in the schools. The research found that time pressure, teaching method, resource issues and students resulted in the above problem. The study proposed a preliminary IL teaching model for Vietnam's upper secondary schools. This study has made contributions to both theory and practice. One of the most significant contributions is associated with the study context, because while IL research has been hitherto dominated by English-speaking countries, Vietnam, however, remains under-represented. Even so, this research remains limitations that need to be addressed in future studies.

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LIST OF ABBREVIATION

AASL	American Association of School Librarians
ACRL	Association of College and Research Libraries
AECT	Association for Educational Communications and Technology
ALA	American Library Association
ANCIL	A New Curriculum for Information Literacy
ANZIIL	Australian & New Zealand Institute for Information Literacy Framework
APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
ASEM	Asia-Europe Meeting
B-TILED	Beile Test of Information Literacy for Education
CAUL	Council of Australian Librarians
CCSSO	Council of Chief State School Officers
CEFR	Common European Framework of Reference for Languages
CILIP	Chartered Institute of Library and Information Professionals
CRB	Criminal Records Bureau
CRC	Chinese Reading Comprehension
DPA	Data Protection Act
EMIS	Education Management Information System
HCMC	Ho Chi Minh City
HE	Higher education
IB	Information behaviour
ICT	Information and communication technology
IDS	Institute of Development Studies
IEA	International Association for the Evaluation of Educational Achievement
IFLA	International Federation of Library Associations and Institutions
IL	Information literacy
ILT	Information Literacy Test
IM	Ministry of Interior
ISP	Information Search Process model
IT	Information technology
ITOCA	Information Training and Outreach Centre for Africa

JMU	James Madison University
La Francophonie	Organisation internationale de la Francophonie
MIL	Media and information literacy
MOET	Ministry of Education and Training
NGA Center	National Governors Association Center for Best Practices
OCLC	Online Computer Library Center
OECD	Organisation for Economic Co-operation and Development
OIF	Organisation internationale de la Francophonie
OPAC	Online public access catalog
PIKE	Procedural Information-seeking Knowledge test
SAILS	Standardized Assessment of Information Literacy Skills
SCONUL	Society of College, National and University Libraries
SPSS	Statistical Package for the Social Sciences
TRAILS	Tool for Real-time Assessment of Information Literacy
UK	United Kingdom
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UREC	University Research Ethics Committee in Northumbria University
US	United States
VILASAL	Vietnamese Library Association of Southern Academic Libraries
VND	Vietnamese Dong
WTO	World Trade Organisation

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PREFACE

This thesis is submitted for the degree of Doctor of Philosophy at the University of Northumbria at Newcastle, United Kingdom. The research described herein was funded by the Ministry of Education and Training, Vietnam. The research was conducted under the supervision of Dr. Alison Pickard and Dr. Jackie Adamson in the Department of Computer and Information Sciences, Northumbria University, Newcastle, United Kingdom, and Dr. Geoff Walton in Manchester Metropolitan University, Manchester, United Kingdom, from 2014 to 2017.

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DECLARATION

I declare that the work contained in this thesis has not been submitted for any other award and that it is all my own work. I also confirm that this work fully acknowledges opinions, ideas and contributions from the works of others.

Any ethical clearance for the research presented in this thesis has been approved. Approval has been sought and granted by the Research Ethics Committee of the Faculty of Engineering and Environment, as part of the University Research Ethics Committee (UREC), Northumbria University on 26/11/2014.

I declare that the word count of this thesis is 82,366 words

Name: NGO THI HUYEN

Signature:

Date: 12/09/2017

CHAPTER ONE: INTRODUCTION

1.1. Overview

The term "information literacy" (IL) became common among researchers and practitioners after its inception in 1974 by Paul Zurkowski (Behrens, 1994; Bruce, 1997a; Andretta, 2005; Laxman, 2010; Pinto, Cordón, & Gómez Díaz, 2010; UNESCO, 2011a). The emergence of IL originates from the development of technology and education (Rader, 2002) as well as the relationship between learners and information (OECD, 1996; Andretta, 2007). In particular, we are witnessing the information explosion, especially the growth of digital information (Virkus, 2003) that has resulted from the development of digital technologies (Andretta, 2005). According to Breivik (1998), by 2020, human knowledge will increase two-fold every 73 days. However, "more information is not always better" (Case, 2012, p. 375). A large amount of information can bring many challenges to individuals when they engage with the information environment. IL can be considered a tool to help individuals know which information they need, where and how they can find it, and how to use it. Furthermore, lifelong learning is emerging in the goals of educational institutions and professional organisations (Scales & Von Seggern, 2014). Students are required to have the ability to "make informed decisions and act effectively and responsibly" (Farmer, 2013, p. 172). Studies point out that this can be achieved by promoting the development of IL (A. Mutch, 1997; ACRL, 2000; Secker & Coonan, 2011).

The use of information is linked to learning activities (Kari & Sovalainen, 2010; Virkus, 2013). Evidence suggests that learning and teaching pedagogical intervention can also facilitate the development of IL. Also, information behaviour (IB)[1] research provides an insight into the process of seeking and using information. This study, by exploring research in this area, hopes to generate a framework that could be used in promoting the implementation of IL programmes effectively in the context of high school education, particularly in Vietnam. In order to suggest an appropriate approach that could be used to promote the development of IL programmes at high school education level in the country, this research concentrates on investigating the practice of IL teaching and learning in upper secondary schools.

[1] The concept of IL and IB are defined in Chapter Three.

1.2. Information literacy and other literacies

It is noted that the nature of information is the inspiration for the emergence of several terms, such as information and communication technology (ICT) competence, information skills, academic, digital, visual, media and 'e' literacies. These terms are sometimes interpreted as synonyms with IL, for example, information skills (A. Mackenzie, Howard, Makin, & Ryan, 2002). These terms and IL have some similarities and overlap with each other (A. Martin, 2003). However, there is a difference between these terms and IL. For example, ICT competence is being competent to "use ICT tools and applications in particular domain" (Llomaki & Kankaanranta, 2009, p. 117). IL is considered an overarching term that reinforces other literacies (Bruce, 2004; Walton, 2009). This study concentrates on examining IL in Vietnam. Exploring other terms, as mentioned above, is gone beyond the scope of this research.

There is a wide range of definitions of IL and this term has it own development history. One of the most influential definitions to date is introduced by the American Library Association (ALA) which states IL as a set of abilities allowing individuals to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (ALA, 1989, p. 1). As the focus of this study is investigating the development of IL in a particular context – Vietnam, it follows the view of Walton and Cleland (2013) who indicate that the development of IL capability ensues from a broader social setting and that IL comprises three spheres, finding, evaluating and using information, and each scope activates its own set of behavioural, cognitive, metacognitive and affective elements.

1.3. Motivation of the study

IL has become increasingly significant in recent years (Rader, 2002; Johnston & Webber, 2003; Thornton, 2008; UNESCO, 2011a). Research in this field has been hitherto dominated by English-speaking countries, such as the United States (US), Australia and the United Kingdom (UK), with a great deal of work emerging recently from Africa and some countries in the Far East, for example, China, Hong Kong and Singapore (Virkus, 2003; Aharony, 2010; Hepworth & Walton, 2013; Majid, Chang, Aye, Khine, & Wai, 2015). Vietnam, however, remains under-represented. It is shown that IL in the educational arena has received great attention from researchers and practitioners with a growing number of publications (Price, Becker, Clark, & Collins, 2011). However, according to Lloyd (2011),

the way individuals become information literate is significantly affected by the specific setting. Therefore, exploring how IL is experienced in different contexts is needed. The literature shows that there is a lack of studies conducted to date to find Vietnamese students' IL level as well as teaching and learning IL in the country. This research was conducted to redress this gap by examining IL in the Vietnamese educational arena.

The literature of IL in Vietnam was reviewed. It was found that IL is gaining the interest of several researchers in Vietnam, but research has been somewhat scattered, mostly within higher education (HE) institutions. IL in high schools has not received much attention from researchers and practitioners. There is a lack of understanding of how high school students develop their IL as well as how IL initiatives are framed in the secondary education in Vietnam. Consequently, this research mainly focuses on IL in upper secondary schools in the country.

Educational institutions in Vietnam are now replacing the transmission approach in teaching[2] by the student-centred teaching method that encourages students' independent learning. Lifelong learning has begun to appear as one of the fundamental educational objectives in the country. This is demonstrated by a range of educational projects which have been recently promoted by the Ministry of Education and Training (MOET) and other educational departments. Furthermore, the MOET is implementing the process of developing a new general education curriculum[3] in order to promote knowledge acquisition, critical thinking and active learning in schools. This raises the question as to what schools in the country should do to prepare students to become lifelong learners. There is evidence that IL is an essential tool to the implementation of a student-centred teaching approach (Lwehabura, 2007) and promotes lifelong learning (ACRL, 2000; Bruce, 2004; Garner, 2005; Kurbanoglu, Akkoyunlu, & Umay, 2006; Pope & Walton, 2006; Andretta, 2007; Folk, 2014). Thus, educators and students should gain a more in-depth understanding of IL and its impact on their teaching and learning in order to achieve educational goals successfully. In addition, educational policy makers need to be informed about issues that could affect the implementation of educational initiatives. A lack of understanding of what is

[2] The transmission approach in teaching is explained in Chapter Three, Section 3.2.1.
[3] The MOET is still in the process of amending the new general education curriculum proposal. The drafts were published to receive comments from citizens and experts. More information can be found in Chapter Two, Section 2.2.2.

happening in the education system may bring disadvantages in the process of education innovation in the country. Therefore, this research could contribute to planning, designing and implementing educational initiatives.

Vietnam is in the process of reforming its education system to improve the quality of education and develop lifelong learning. Factors affecting the improvement of the education system should be considered comprehensively. The MOET is responsible for setting broad policy for all levels of education. An understanding of what could affect the improvement of the education system in order to deliver appropriate educational policies is essential. This study could provide some hints to the MOET in the development of educational policies and initiatives. The MOET funded this research as it saw the possible contributions of IL to Vietnam's education system.

1.4. Aim and objectives

The aim of this study is to investigate the practice of IL teaching and learning in Vietnam's upper secondary schools in order to suggest an IL teaching model that could be adopted when introducing or developing IL programmes into Vietnam's upper secondary schools. A set of four specific research objectives has been developed to achieve this aim:

(1) To carry out an exploration of the theoretical foundations of IL to adopt an appropriate IL model for studying the IL skills of Vietnam's upper secondary students
(2) Assess the IL level of upper secondary students in Vietnam
(3) Identify the ways in which IL in-practice initiatives are framed for upper secondary students in Vietnam
(4) Suggest an appropriate IL teaching model for Vietnam's upper secondary schools

1.5. Methodology

In terms of sampling, three upper secondary schools (one for the pilot study and two for the main study) were selected to examine the practice of IL teaching and learning in the Vietnamese educational context based on their willingness. There were four groups of participants from each institution, including school librarians, working as key informants to invite students (aged 15-18), teachers and administrators in their schools to take part in the study.

The research employed a mixed-methods multiple case study approach, incorporating both quantitative and qualitative research methods. The context of each case was explored at both macro and micro environment level. Regarding research design, this research utilised the explanatory sequential design that includes three phases. The collection and analysis of quantitative data was followed by two qualitative phases. There was a concern that participants might have a limited understanding of the IL concept. Furthermore, little IL research has been conducted in Vietnam, especially in the secondary education context. Therefore, this research used a combination of different data collection techniques, including questionnaires, semi-structured interviews and document reviews. This allowed the researcher to gather data from different sources. The findings from different data sources could be consolidated to each other and, therefore, a more comprehensive picture of the practice of IL teaching and learning in schools could be explored. Specifically, in the first phase, questionnaires were delivered to students in Grade 10, 11 and 12 to measure their IL in term of developing search strategies, evaluating information sources, using information ethically and using English to engage with information effectively. Assessing students' IL was based on the expanded version of the Standards for the 21st-Century Learner devised by the American Association of School Librarians (AASL)[4] that comprises four original standards and one additional standard[5]. In the second phase, purposive sampling was used to identify significant cases for the follow-up student interviews. Case selection was based on students' IL scores (high, average and low scores) to examine their experiences in IL and then reasons behind different results might be further examined. In the third phase, professional[6] interviews and document reviews were conducted to strengthen the result of the previous phases. An IL teaching model was then proposed based on the findings of the study.

Quantitative and qualitative data were analysed using the Statistical Package for the Social Sciences (SPSS) and Nvivo, respectively.

1.6. Significance of the study

The research makes a contribution to both the theory and practice.

[4] In this thesis, the Standards for the 21st-Century Learner devised by the AASL is called the AASL model or the AASL standards for short.
[5] An explantion of the expanded AASL model is presented in Chapter Three, Section 3.4.
[6] By professionals, this thesis means administrators, teachers and librarians.

The most significant contribution of this research is providing an understanding of the practice of IL teaching and learning in Vietnam's upper secondary schools – a context which has not, as yet, been explored comprehensively. IL is a research field that has gained great interest from researchers and practitioners. This is demonstrated by the huge amount of literature on the field. Nonetheless, there is an absence of studies which concentrate on IL in Vietnam, in particular teaching and learning IL in Vietnam's upper secondary schools. The idea of developing information literate individuals is widely accepted. However, how to deliver IL instructions is the most difficult part and requires much effort from educators (Walton & Cleland, 2013). In practice, "there is no room for a one-size-fits-all instruction program" (Wilder, 2013, p. 152). Also, context is an important part that needs to be considered in the implementation of IL programmes (Pickard, 2005; Lloyd, 2011). Within a specific context, how an IL programme is valued, supported and delivered is considerably influenced by that context. The context will have an impact on the level of resources and elements needed to deliver IL instructions. A successful IL programme will only be achieved if the issues related to the context are solved to a reasonable level. Therefore, it is necessary to obtain an understanding of the issues related to a specific setting/context that facilitate or restrain the development of IL (Bent, 2008; Lloyd, 2011). By investigating the practice of IL teaching and learning in Vietnam's upper secondary schools, this study draws a picture of the development of IL in an under-researched context. Despite the emergence of lifelong learning as one of the main educational objectives, there was the absence of IL programmes in the schools. Four main reasons were explored to explain the nonexistence of IL programmes in the schools, including time pressure, teaching method, resource issues (finance and human resources) and students' awareness of the importance of IL. This study provides additional evidence to allow researchers to make more comprehensive statements related to teaching and learning IL in the educational setting in recent years. Furthermore, this research has been conducted by a Vietnamese researcher. Thus, this research might provide an insight into knowledge concerning cultural, social and educational issues. This might provide a better understanding of teaching and learning IL in Vietnam's schools.

Many studies were carried out to explore learners' IL at different ages, ranging from primary schools to HE. This study also contributes to the literature by adding a detailed understanding of the relationship between IL and student age (15-18). This research

provides evidence related to students' IL level and factors affecting their IL (awareness, academic capability, IL self-learning, teachers, family support, teaching method, and study environment). This might be useful in implementing IL initiatives for students (aged 15-18), especially students in countries where their educational context is similar to Vietnam.

The research contributes to the base of research about IL assessment using the AASL model (AASL, 2007). There are a number of studies which report on their IL assessment using the IL models in general and the AASL standards (AASL, 2007) in particular. The Tool for Real-time Assessment of Information Literacy (TRAILS) is an example of using the AASL standards to develop its IL assessment items. This standardised IL assessment test has been used by many schools in the US to measure students' IL. Similarly, this study also utilised the AASL standards to explore Vietnamese students' IL capability. Nevertheless, the study expanded the AASL model by adding one more standard, using foreign language to engage with information effectively. The expanded AASL model was utilised to measure upper secondary students' IL in Vietnam in terms of developing search strategies, evaluating information sources, using information ethically and using English to engage with information effectively. This study is the first attempt to assess Vietnamese upper secondary students regarding their ability to use English to engage with information effectively as well as explore teaching this skill in the schools. The results of the IL assessment of this study can be used to compare with the findings of other studies in order to explore the IL level of young people in more depth. Additionally, expanding the model might give a hint to countries where English is not their first or official language in applying existing IL models into their education system.

Various methods of teaching and learning are employed in different countries around the world. The role of IL in teaching and learning has been widely admitted and adopted in many countries, for example, the US, the UK, Hong Kong and Singapore, where the education system has overcome the transition period. However, this study was conducted in Vietnam, where the education system is still at a crossroads. Evidence suggests that although a new approach in teaching and learning is being implemented in schools, in fact, the transmission approach in teaching is still mainly used in the schools. This is one of the reasons that resulted in the underdevelopment of students' IL capability and the lack of IL programmes. This study paints another picture of the development of IL in the education system in transition. This will provide some guidelines for good practice in the

implementation of IL programmes at both national and global level, particularly in countries where the education system is still in transition.

Many IL models have been introduced in the research history of the field. The investigation found that none of them are applied in the schools. Based on the adoption of an existing IL model (AASL model) and the specific educational context of Vietnam, this study suggests an IL teaching model for Vietnam's upper secondary schools. It not only indicates what an information literate student is, but it also shows how to implement an IL programme. As elements of the model, such as project-based learning, cognitive and affective elements and staff development, are mentioned and discussed in the literature, it proves that these elements remain valid in the Vietnamese educational context. The IL concept is quite new to schools in the country; therefore, this model is useful to them since it delivers a guidance in the implementation of an IL programme.

This research not only reports on the research findings, but it also provides suggestions to improve teaching and learning IL in Vietnam's upper secondary schools. This may help educational policy makers in the country, particularly the MOET and departments/organisations concerned, understand what is happening in the education system and what they need to do in order to enhance students' learning. Also, this study might help professionals and students raise the awareness of the important role of IL in teaching and learning as well as their own contributions in designing and implementing IL initiatives. As a result, it helps professionals and students adapt and reflect themselves on their teaching and learning process more effectively.

1.7. Thesis structure

This thesis includes seven chapters, which are organised as follows. The present chapter is followed by Chapter Two, which provides a description of the context in which the study is situated. The wider context of the research concerning Vietnam as a country, such as demography, economy, culture and society, is briefly discussed. The chapter then discuss issues surrounding Vietnam's educational context. The next section presents the characteristics of the school library system in the country. This is followed by an explanation of digital access facilities, both at home and at school, for the country's upper secondary students.

Chapter Three looks closely at the literature on the three key research themes that are relevant to the study topic. The first section describes studies in the IL scope. The literature related to teaching and learning theories is then presented in the second section. The third section reviews two IB models. This chapter then occludes with an introduction of an expanded version of the AASL model which is used as a theoretical framework for this study.

Chapter Four provides a detailed account of the methodology deployed in this research which contains both quantitative and qualitative strategies. This chapter then describes the sample procedure for the research in terms of size and the participant recruitment approach. This chapter affords an outline of the data analysis process and an examination of the ethical guidelines. A description of the research strategies employed in the pilot and main study is also provided in this chapter. It also includes a brief description of the results of the pilot study.

Chapter Five reports on the findings of the main study. This chapter consists of three sections. The first part presents the results of the paper questionnaire survey which was used to assess students' IL level. The second section shows the findings of the student and professional interviews. The results of document analysis are then stated in the third section.

Chapter Six discusses the results generated by this study in relation to research objectives and the literature. This chapter highlights the important findings and discusses issues surrounding students' IL capability, factor affecting students' IL and the status of teaching IL in the schools.

The thesis is concluded by Chapter Seven, which summarises the results that have been found in the study. An explanation of how the research objectives were addressed in the research is then reported. This is followed by an introduction of a preliminary IL teaching model for Vietnam's upper secondary schools. This chapter also provides recommendations for the practitioners and a number of suggestions on future studies. This chapter then presents a reflection on the study, including limitations of the research.

CHAPTER TWO: CONTEXT OF THE STUDY

2.1. Demographic, economic, cultural and social context

Vietnam (officially: The Socialist Republic of Vietnam) is situated in the Indochina Peninsula of Southeast Asia. It covers a total area of approximately 330,972 km^2 and has a population of about 90 million (General Statistics Office, 2013). Vietnamese is the official language in the country. Vietnam is a multi-ethnic country with 54 ethnic groups, within which there are 53 ethnic minorities. The Viet ethnic group (also known as Kinh) makes up about 86% of the total population of the country and is concentrated in the delta and coastal plain. The country is divided into 58 provinces and five central cities with the capital city being Hanoi[7] (General Statistics Office, 2014). Vietnam does not have a multi-party political system; rather, it is led by a single party - the Vietnam Communist Party.

Vietnam has undergone many changes in terms of politics in its long multi-ethnic and multi-lingual history. This has significantly affected the country's economic, cultural and social advancement (Vietnam Government Portal, 2016a, 2016b). As the result of the domination by China over a long period (H. Nguyen, 2002), the development of Vietnamese society and culture is considerably influenced by three ideologies and religions: Confucianism, Taoism and Buddhism (Vietnam Government Portal, 2016b). Specifically, Confucianism concentrates on the five human relationships, comprising sovereign and subject, parent and child, elder and younger brother, husband and wife, and friend and friend. The belief is that society is organised based on "the cosmic order and its hierarchy of superior–inferior relationships" (Fang & Bi, 2013, p. 136). This has created the notable characteristics of passivity, compliance, submissiveness, acceptance of fate and maintenance of the status quo in China's culture and that of its neighbouring countries, such as Vietnam, Korea, Japan and Singapore (Fang & Bi, 2013). The philosophy of Buddhism was blended with Confucianism as Buddhist monks were the first Confucian scholars in Vietnam (H. Nguyen, 2002). Originating in India, Buddhism has rapidly developed and has had a salient influence on Asian countries, including Vietnam (Tomalin & Starkey, 2013). Human suffering caused "by craving and desire for things external to the individual self" is considered the starting point of Buddhism (Tomalin & Starkey, 2013, p. 31). It teaches individuals to "live patiently with a situation" (Tomalin & Starkey, 2013, p. 31). Meanwhile, the relationship between humans and the cosmos is emphasised in Taoism

[7] In Vietnam, central cities are not directly under any provinces. Therefore, some statistics simply indicate that Vietnam has 63 provinces and cities.

(also known as Daoism). According to Taoism, human life is considered a small part of a wider nature with which human activities must be reconciled. It does not encourage unnatural assertiveness (Miller, 2013). This blending of three ideologies has contributed to the development of Vietnam's society and culture. After the reunification in 1976, the state issued a number of laws to regulate social relationships as well as to make good the shortcomings of the traditional culture. However, these may require much more effort from the government and its citizens.

Vietnam officially gained independence in the North in 1945 and became united in 1976 following the national liberation movement known as Giải phóng miền Nam (Release the South). This movement aimed to overthrow the Government of the Republic of Vietnam and the interference of the US during the Vietnam War from 1945 to 1975. In 1986, Vietnam conducted a number of economic and political reforms called "Đổi Mới" (Renovation) which allowed the Vietnamese economy to integrate into the world economy. Although the transition has not yet completed, it has brought positive signals through the rapid economic growth of Vietnam (World Bank, 2013). To date, Vietnam has established diplomatic relations with most nations in the world and widened economic and commercial relations with over 200 countries and territories (Vietnam Government Portal, 2016a). The country is also a member of the Asia-Pacific Economic Cooperation (APEC), the Association of Southeast Asian Nations (ASEAN), the Asia-Europe Meeting (ASEM), the United Nations (UN), the World Trade Organization (WTO), the Organisation internationale de la Francophonie (OIF) and many other of the world's international organisations.

Unlike some other Asian nations, for example, Singapore and Malaysia, following the "Đổi mới" reforms launched in the late 1980s, the Vietnam economy has shifted from a central plan-based economy[8] to a market-oriented one[9] (Vietnam Government Portal, 2016a). This has changed the face of the country, most sectors of the economy and every aspects of public life. Additionally, Vietnam joined the WTO in late 2006. As a result,

[8] The central plan-based economy is an economy system in which "the volume of output is determined by the authorities and prices are fixed. The central bank controls the quantity of money held by households and firms" (Delatte, Fouquau, & Holz, 2014, p. 376).

[9] The market-oriented economy is an economy system in which "economic agents exhibit demand for money: they autonomously decide the quantity of cash and deposits they want to hold along with the number of transactions they wish to carry out and the opportunity cost of the different monetary aggregates" (Delatte, Fouquau, & Holz, 2014, p. 376).

there has been a wave of foreign investment into Vietnam. The transition sets out a requirement that workers need to be equipped with the right skills, including technical, cognitive, social and behavioural skills (World Bank, 2013). To keep pace with this development, the country has to prioritise human resource development in general and education in particular so as to satisfy the requirements for the processes of industrialisation and modernisation. The Economic and Social Development Strategy and Human Resource Development Project for the period 2011 - 2020 in Vietnam indicate that developing human resources to fulfil the requirements of international integration is the country's focus (The Prime Minister of Vietnam, 2011). Consequently, educational development is considered the first national priority for Vietnam. To achieve this, using educational policies to develop market-relevant knowledge and skills is necessary (Dejaeghere, Wu, & Vu, 2015).

2.2. Educational context in Vietnam

2.2.1. Educational features of Vietnam

The three ideologies and religions not only affect the development of both the society and culture of Vietnam (Vietnam Government Portal, 2016b), but they also influence the educational philosophies of its people (H. Nguyen, 2002). Regarding the relationship between the three ideologies and education, Miller (2013) indicates that Daoism does not encourage students to think for themselves. Instead, students receive instructions/guidance from their teachers and their progress is certified by the religious community. Meanwhile, Confucianism puts the emphasis on the hierarchy of power, wealth and status, which affects educational opportunities (London, 2011). Confucianism gives prominence to ethical learning and it, therefore, creates opportunities for the development of passive learning and the teacher-centred model (V. Nguyen, 2013). Educational slogans, such as "Không thầy đố mày làm nên" ("A young ox learns to plough from an older one") and "Tiên học lễ, hậu học văn" ("Learning behaving first and then learning knowledge"), demonstrate the educational philosophies of Vietnam. Similarly, ethical learning is also mentioned in Buddhism (Tomalin & Starkey, 2013). The blending of the three above ideologies creates a learning environment in which learners passively receive knowledge from their teachers and rote learning is encouraged (H. Nguyen, 2002). Such ideologies significantly affect the thinking of both learners and stakeholders, such as educators and parents (V. Nguyen, 2013).

The Vietnamese believe that learning is the only path for advancement (World Bank, 2011). Therefore, Vietnamese families invest more in their children's education. Families with higher income level increasingly send their children to better equipped schools (World Bank, 2011). Additionally, the value of family is highly appreciated. This has created a lot of pressure for students. This is demonstrated by the slogan "Một người làm quan cả họ được nhờ, một người làm xấu cả họ mang dơ", meaning "An individual who becomes a mandarin brings in great fortune to his extended family, an individual's bad deed defames his whole family". Hence, students have to study as hard as they can to achieve good results in examinations. Since 2015, students now have to pass a national examination after twelve years of school education if they wish to enter HE (colleges and universities) instead of two examinations, as in previous years[10] (MOET, 2014a).

Educational policies in Vietnam are currently attempting to integrate with other countries in Southeast Asia and around the world. In 2000, the country officially started driving the reform of the general education curriculum (K. Nguyen & Nguyen, 2008). As a result, after much effort to improve the education system in the country, education in Vietnam began to achieve some positive results. For instance, as of 2009, 93.5% of the population (aged 15 and over) were literate (General Statistics Office, 2011). Furthermore, school attendance rates increased (World Bank, 2011). Nevertheless, the World Bank (2011) indicates that schools largely remain low quality with a lack of resources. This decreases learning opportunities of Vietnamese students. Additionally, although the Vietnamese education system is in a transitional period, it has not yet met the needs of the country in terms of economic development and social reforms (London, 2011). Vietnam has a large workforce, but companies still face a lack of skilled workers (World Bank, 2013). The percentage of citizens (aged 25 and older) with HE attainment ranks 116 in the world (5.4%). This proportion is low compared to other countries (General Statistics Office, 2011). "Promoting school readiness through early childhood development" is recommended to develop a human resource with adequate skills (World Bank, 2013, p. 8).

Since 1976, the education law has been promulgated and amended in 1998, 2005 and 2009, causing constant change within the education system, including methods of organising

[10] From 2015 backwards, Vietnamese school students had to take two examinations after twelve years of school education: the first one is a graduation examination and the second one is to enter colleges and universities.

examinations and test formats. In recent years, there have been attempts made to replace the traditional delivery mode of transmission by one of self-discovery, discussion and self-explanation, one which allows students to expand their knowledge and improve research skills. A constructivist approach[11] to student learning is now being applied within the education system. This is demonstrated by the range of educational projects enforced in recent years, such as "Building a learning society for the period 2012-2020" (The Prime Minister of Vietnam, 2012a), "Education development strategy for the period 2011-2020" (The Prime Minister of Vietnam, 2012b) and "Nine action plans to achieve the objectives of the education development strategy 2011-2020" (MOET, 2013). The 11th Congress of the Communist Party emphasises that the Vietnamese education system

> …should be fundamentally and comprehensively renovated in the coming years, aiming at standardisation, modernisation, socialisation, democratisation and international integration; renovating the curriculum, contents, teaching and learning methods; renovating the education management mechanism, building capacity for the teachers and training managers (The Central Committee of the Communist Party of Vietnam, 2013, p. 1)

Additionally, the 11th Congress of the Communist Party set up a range of educational objectives with the aim of improving the education system of the country. Specifically, as for high school education, one of its educational objectives is:

> Focusing on developing intelligence and constitution, forming the quality and capability of citizens, discovering and fostering talent, and directing students to their future career. Improving the quality of comprehensive education, focusing on ideal, tradition, ethics, lifestyle, language, information technology (IT), practical skills and capability education, and the application of theory into practice. Developing creativity and self-learning; and encouraging lifelong learning (The Central Committee of the Communist Party of Vietnam, 2013, pp. 3-4)

The Education Development Strategy for the period 2011-2020 states that the objectives of Vietnam's education system are to:

- Construct a popular, national, scientific, modern and socialist education system;
- Fundamentally and comprehensively innovate the education system towards standardisation, modernisation, socialisation, democratisation and international integration;
- Adapt the education system to the socialist-oriented market economy;

[11] The constructivist approach is explained in Chapter Three, Section 3.2.3.

- Develop an educational system associated with the development of science and technology;
- Enhance the quality of moral education, lifestyle, creative ability and practical skills to satisfy the requirements of the development of the economy and society, the processes of industrialisation and modernisation, security and defence;
- Satisfy the development needs of each learner, especially those who show an aptitude in a specific field.

(The Prime Minister of Vietnam, 2012b)

Although Vietnam has conducted a reform in education in order to replace a teacher-centred model by a student-centred one (Vietnamese Government, 2005), studies point out that a didactic and teacher-centred teaching approach is still mainly used in the education system (Pham, 2010; N. Nguyen & Williams, 2016). London (2011) argues that the education system in the country is still at a crossroads and that there is a big gap between educational policies and practice. Therefore, the transition is facing many challenges and requires more effort from educators and other stakeholders.

In the process of improving the education system, extra and private class attendance has received great attention from educators and citizens in recent years. In Vietnam, the school week runs on a six-day shift. It starts on Monday and ends on Saturday (Kalman, 2002). Students usually attend classes for half of the day. However, over the past decade, many schools have applied the full day schooling policy, as they are allowed to do (World Bank, 2011). They organise extra classes[12] for the remaining half of the day under the agreement of the students' families in order to provide extra knowledge in main subjects, such as Maths, Chemistry, English, etc. At the same time, many students attend private classes[13] in the afternoon and evening. After conducting a survey at 9,189 households in Vietnam, A. Dang (2011) found that 32% of primary school students attended private classes, while the percentage of lower and upper secondary school students was 46% and 63%, respectively. Vietnamese students tend to attend private classes in order to obtain better examination results. Extra classes can be encountered across several countries in East Asia. However, extra and private class attendance is a noticeable issue in Vietnam (World Bank, 2013). Bray and Lykins (2012) indicate several reasons for the recent spread of private classes, one being

[12] By extra classes, this thesis means classes which are organised by schools after official classes.
[13] By private classes, this thesis means classes which are individually organised by teachers.

social competition. Another reason is teachers organise private classes to increase their income and their students are considered a monopoly market. Students are sometimes forced to attend private classes that are taught by their teachers. Students attend those classes with the aim of seeking good grades in the formal classes and, as a result, private class attendance causes a range of problems, such as lack of time for alternative activities, undue and unofficial payment pressure to avoid failing the exam, a decrease in teachers' motivation during the formal teaching hours and educational inequality (World Bank, 2013).

Generally, the country is currently putting much more effort into reforming the education system and has achieved initially satisfactory results. There are many debates concerning improving the education system in Vietnam. How to improve the quality of education while the country still faces the difficulties of financial and human resources is a preoccupation of both educators and the government.

2.2.2. The current education system in Vietnam

Vietnam's education system is under the management of the MOET. This organisation is responsible for setting broad policy for all levels of education. However, the management of resources, such as human resources, financial resources and infrastructure, is decentralised. Specifically, universities are directly managed by the MOET and other ministries at the central level. Upper secondary and professional secondary schools are provincially managed by the Department of Education and Training, while lower secondary and primary schools are locally managed in the districts or communes by the District Bureaus of Education and Training (V. Le, 2009).

Vietnamese is the main language used in the national education system. According to the statistics from the MOET, as of 2016, the Vietnamese educational system consists of 28,951 schools (including primary and secondary level) and 442 institutions (including colleges and universities). The total number of teaching staff is 861,369 in schools and 93,851 in colleges and universities. The number of pupils and students is 15,353,785 and 2,202,732, respectively (MOET, 2016). Other specific data can be found in the table of Vietnam's education statistics 2015-2016 (see Appendix 40 for further details). At the upper secondary education level, there are 2,788 schools, with a total number of 2,425,130 students (MOET, 2016).

In Vietnam, high schools are divided into two groups, as below:

- Public schools are established and managed by the state agencies. The state funds infrastructure construction and recurrent expenditure. A nominal fee can be contributed by students' families.
- Non-public schools are established and managed by social organisations, social-professional organisations, economic organisations and individuals under the permission of the state agencies. Funding for infrastructure construction and recurrent expenditure is from tuition fees, organisations or individuals, not from the state.

(MOET, 2007)

However, both types of school are operated under the control of the MOET.

Typically, public schools enrol students based on their entrance examination scores or academic performance at the lower secondary level. Students firstly apply to their local public schools. They can then apply to non-public schools to study if their entrance examination marks are not sufficient to enter public schools (World Bank, 2014).

According to the Education Law of 2005 (National Assembly of Vietnam, 2005) and the Revised Education Law of 2009 (National Assembly of Vietnam, 2009), the structure of the national education system (Diagram 1) is organised as follows:

(1) The national education system includes regular education and continuing education. Thus, continuing education can be understood as a method of education and considered a sub-system of the national education system.

(2) Education and training levels of the national education system comprise four levels:

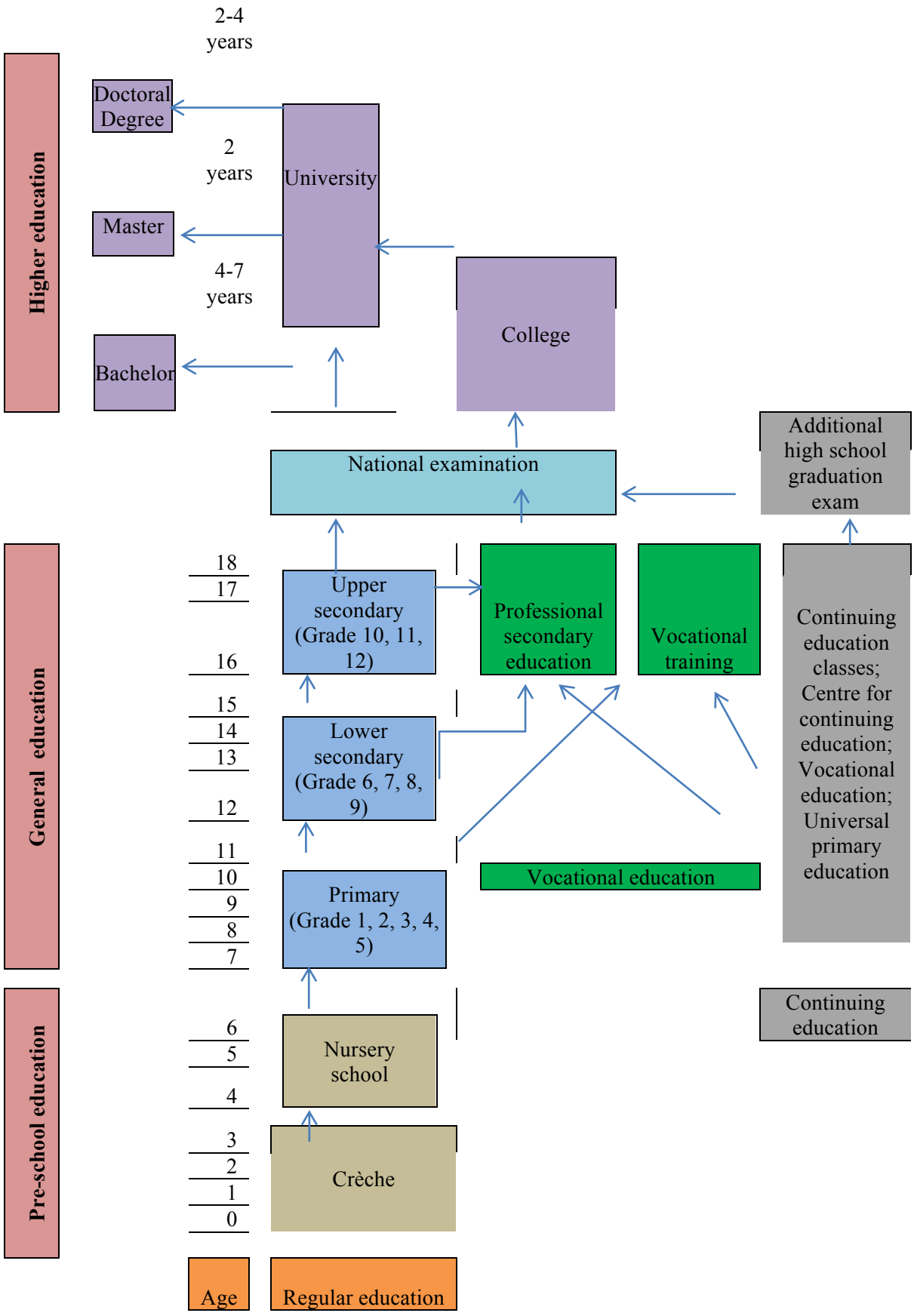
a) Pre-school education with crèche and nursery;

b) General education involves three levels: primary schools (Grade 1 to 5), lower secondary schools (Grade 6 to 9) and upper secondary schools (Grade 10 to 12);

c) Vocational education consists of professional secondary and vocational schools;

d) HE and postgraduate (called HE in general) encompass colleges, universities, master-level courses and doctoral degree.

Diagram 1. The education system in Vietnam



A new general education curriculum and new textbooks are being developed to promote knowledge acquisition, active learning and creative and critical thinking in schools (World Bank, 2013). Some initial drafts were published to call for comments from individuals, experts and organisations, the latest being issued in August 2015 (MOET, 2015b). The draft provides a clear definition of students' competences with learning outcomes, teaching methods and learning assessment. Optional and core subjects were also drafted out (Table 1). For textbooks, they are compiled to provide knowledge with the aim of supporting teaching and learning activities at school. Textbooks are compiled by a group of educators, scientists, and education professionals who are experts in the fields of science and education. The MOET is responsible for organising and directing the implementation of this work. While student textbooks are the main learning material for students, teacher textbooks support teachers in teaching activities. Teacher textbooks have the role of concretizing student textbooks in terms of teaching methods. Teachers can use them as a guide to transfer knowledge from student textbooks to their students.

Regarding the goals of upper secondary education, based on maintaining, strengthening and shaping the virtue and competencies established at the lower secondary education level, the curriculum aims to help students shape the quality and capability of workers, citizen personality and the awareness of their rights and duties to the state. They should have the capability of self-learning and the awareness of lifelong learning as well as career-oriented knowledge and capability in accordance with their ability, interests, conditions and circumstances in order to go on to further education or entering the working life (MOET, 2015b).

Table 1. General education syllabus

<table>
<tr><td>Period</td><td colspan="9">BASIC</td><td colspan="3">CAREER ORIENTED</td></tr>
<tr><td>Level</td><td colspan="5">Primary</td><td colspan="4">Lower secondary</td><td colspan="3">Upper secondary</td></tr>
<tr><td>Grade</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td></tr>
<tr><td rowspan="28">Subjects and the number of class each subject/week</td><td colspan="5">Vietnamese (C)</td><td colspan="4">Literature (C)</td><td colspan="3">Literature 1 (C)</td></tr>
<tr><td>12</td><td>12</td><td>8</td><td>6</td><td>6</td><td>4</td><td>4</td><td>4</td><td>4</td><td>2</td><td>2</td><td>2</td></tr>
<tr><td></td><td></td><td colspan="3">Foreign language 1 (C)</td><td colspan="4">Foreign language 1 (C)</td><td colspan="3">Foreign language 1 (C)</td></tr>
<tr><td></td><td></td><td>4</td><td>4</td><td>4</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td></tr>
<tr><td></td><td></td><td colspan="3">Foreign language 2 (O1)
Ethnic language (O1)</td><td colspan="4">Foreign language 2 (O1)
Ethnic language (O1)</td><td colspan="3">Foreign language 2 (O1)</td></tr>
<tr><td colspan="5">Mathematics (C)</td><td colspan="4">Mathematics (C)</td><td colspan="3">Mathematics 1 (C)</td></tr>
<tr><td>3</td><td>3</td><td>6</td><td>6</td><td>6</td><td>4</td><td>4</td><td>4</td><td>4</td><td>2</td><td>2</td><td>2</td></tr>
<tr><td colspan="5">Lifestyle education (C)</td><td colspan="4">Ethics (C)</td><td colspan="3">Citizens and the country (C)</td></tr>
<tr><td>2</td><td>2</td><td>2</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>2</td><td>2</td><td>2</td></tr>
<tr><td colspan="5">Physical education (C) - Sport (O3)</td><td colspan="4">Physical education (C) - Sport (O3)</td><td>4 subjects (O2)</td><td>4 subjects (O2)</td><td>3 subjects (O2)</td></tr>
<tr><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>14</td><td>12</td><td>9</td></tr>
<tr><td colspan="5">Music (O3) – Fine art (O3)</td><td colspan="4">Music (O3) – Fine art (O3)</td><td colspan="3" rowspan="11">1. Students select optional subjects out of the following subjects (O2): History, Geography, Literature 2, Physics, Chemistry, Biology, Informatics, Technology, Maths 2, Natural science, Social science, but they have to make sure that:
- If they select Natural science, they cannot select Physics, Chemistry, and Biology; if they select Social science, they cannot select History and Geography.
2. The following subjects: Music, Fine art, Sports are designed to be special subjects that are combined with Creative experience activities so that students can select (O3).</td></tr>
<tr><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>1,5</td><td>1,5</td><td>1,5</td><td>1,5</td></tr>
<tr><td colspan="3" rowspan="2">Life around us (C)</td><td colspan="2">Learning about society (C)</td><td colspan="4" rowspan="2">Social science (C)</td></tr>
<tr><td rowspan="3">2</td><td rowspan="3">2</td><td rowspan="3">2</td><td>2</td><td>2</td></tr>
<tr><td>3</td><td>3</td><td>3</td><td>3</td></tr>
<tr><td colspan="2" rowspan="2">Learning about nature (C)</td><td colspan="4" rowspan="2">Natural science (C)</td></tr>
<tr><td>2</td><td>2</td></tr>
<tr><td>4</td><td>4</td><td>4</td><td>4</td></tr>
<tr><td colspan="5">Technology (O3) – Informatics (O3)</td><td colspan="4">Informatics (O3)</td></tr>
<tr><td rowspan="3">1</td><td rowspan="3">1</td><td rowspan="3">1</td><td rowspan="3">2</td><td rowspan="3">2</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td colspan="4">Technology (O3)</td></tr>
<tr><td>1,5</td><td>1,5</td><td>1,5</td><td>1,5</td></tr>
<tr><td colspan="5">Creative experience activities (O3)</td><td colspan="4">Creative experience activities (O3)</td><td colspan="3">Creative experience activities (O3)</td></tr>
<tr><td>4</td><td>4</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>5</td><td>4</td><td>4</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td colspan="2">Technical research (O1)</td><td colspan="3">Technical research (O1)</td></tr>
<tr><td colspan="5">Self-learning with instructions</td><td></td><td></td><td></td><td></td><td></td><td colspan="2">Special subject (O3)</td></tr>
<tr><td>4</td><td>4</td><td>2</td><td>2</td><td>2</td><td></td><td></td><td></td><td></td><td></td><td>3</td><td>6</td></tr>
<tr><td>Class/week</td><td>32</td><td>32</td><td>32</td><td>32</td><td>32</td><td>28</td><td>28</td><td>28</td><td>28</td><td>28</td><td>28</td><td>28</td></tr>
</table>

Note: C: Compulsory; O: Optional

Source: MOET (2015a, p. 11)

2.2.3. Teaching foreign languages

As discussed above (Section 2.1), the study programme at all levels in the country concentrates on training those who will be capable of working in a socialist-oriented market economy. Specifically, one of the capabilities that they need to achieve is the ability to engage with new technology and information presented in foreign languages. Evidence suggests that the proficiency of using language, especially foreign languages, and IT skills helps students gain new knowledge that exists in many different formats and is more effectively presented in popular languages, for instance, English. Therefore, one of the crucial goals of secondary education is teaching foreign languages and computer science towards standardisation to ensure students' proficiency in using foreign languages and computers. In the general education programme, first foreign language is a compulsory subject from Grade 3 to Grade 12 and second foreign language is an optional subject that can begin and end at any grade from Grade 3 to Grade 12 depending on the needs of the students and the schools' teaching ability (MOET, 2015b) (Table 1). As for ethnic minorities, improving the capacity of using Vietnamese as the mother tongue also attracts great concern (MOET, 2013).

To adapt the education system to the socialist-oriented market economy, in 2014, the MOET promulgated the Circular Letter No. 01/2014/TT-BGDĐT to provide a six-level foreign language skills frame. The frame is based on the Common European Framework of Reference for Languages (CEFR) and English skills frames of other countries, combined with the practice of teaching, learning and using foreign languages in Vietnam. The frame is divided into three levels (Beginner, Intermediate and Advance) and six grades (from Grade 1 to Grade 6). Each grade is compatible with a particular level from A1 to C2 of CEFR (Table 2).

Table 2. Six-level foreign language skills frame

Frame		**CEFR**
Beginner	Grade 1	A1
	Grade 2	A2
Intermediate	Grade 3	B1
	Grade 4	B2
Advance	Grade 5	C1
	Grade 6	C2

According to the MOET (2014b), on completing upper secondary education, students have achieved Grade 3 in English. This means students will have the ability to:

- Understand the main idea of a paragraph or speech;
- Understand clearly familiar themes in their work, school, entertainment, etc.;
- Communicate and handle situations in that language, especially when in a country where it is spoken;
- Write simple paragraphs related to familiar topics or topics of interest;
- Describe experiences and events, dreams, hopes or ambitions;
- Present and explain reasons, ideas and their plans.

With the aim of improving students' foreign language capability, the MOET has delivered the project "Teaching and learning foreign languages in the national education system for the period 2008-2020" (The Prime Minister of Vietnam, 2008). This scheme is aimed at improving the use of foreign languages, especially English, by students at all levels. This plan focuses on a number of activities, such as investigating the practice of teaching and learning foreign languages, designing a new foreign language teaching and learning programme, enhancing the teaching capacities of teaching staff and investing in teaching equipment (The Prime Minister of Vietnam, 2008). Nevertheless, according to the latest response from the Minister of the MOET on 16 November, 2016 at the national assembly meeting (Phung, 2016), this project has failed in achieving its established goals. This demonstrates that more effort needs to be paid to improving students' English.

2.3. School libraries in Vietnam

The MOET oversees the operation of the school library system in Vietnam. In line with the development of the education sector, the operational content of the school library is constantly being improved, diversified and made more abundant. Specifically, school libraries are offering more services to teachers and pupils. They are working closely with the MOET and also hold competitions, for example: "Pupils tell a story using books" and "Excellent library teacher", which attract many pupils and teachers to participate. These competitions help create a shift in awareness within society and the education sector as to the role of school libraries.

There is little understanding of what is happening in the school library sector in Vietnam (Welch & Murray, 2010). Although it is acknowledged that the school library is necessary for research and the learning and teaching activities of officers, teachers and students (MOET, 1998, 2015b), school libraries have not been operated effectively. More than 50% of school libraries have not achieved the national standard for a school library (U. Dang, 2012). Furthermore, school libraries are facing many challenges, with N. Vu, Pham, and Le (2013) noting a range of obstacles, as follows.

- Funding is limited. Although the MOET has regulations related to providing finance resources for school libraries, many school libraries still do not have adequate budgets to purchase new materials or resources. National standard school[14] libraries also do not receive the proper investment. Approximately 20% of schools do not have libraries, and around 10% of those that do are narrow rooms with few bookshelves and no space to read.
- The capacity of school librarians in general is weakest in comparison with other types of libraries. Specifically, about 80% of them are not professional librarians. Instead, they hold several official positions in schools. According to the Joint Circular No. 35/2006/TTLT-BGDĐT-BNV on staffing in state sector general education facilities issued by the MOET and the Ministry of Interior (MI), each school can allocate an employee to work in both the library and the school equipment office (MOET & MI, 2006). However, one staff member holding two positions may not be able to properly fulfil all duties in a large school. As a result, they may not manage the library effectively. Furthermore, Welch and Murray (2010) indicate that Vietnamese librarians have limited IT and foreign language skills. Libraries are faced with many challenges in attracting high quality personnel because of the low salary. Like many Asian countries, Vietnamese information professionals do not have many chances to conduct ongoing professional development (Stueart, 2000). Although Stueart's (2000) study was conducted a long time ago, it seems its findings still hold true. Librarians in general, and school librarians in particular, are facing many challenges in their ongoing professional development.

[14] The educational quality of national standard schools is higher than schools that have not reached national standards.

- The number of school libraries has been increasing annually. Nonetheless, the development of school libraries has been uneven in different localities. The absence of school libraries in rural and mountainous areas remains a predominant problem.
- The majority of school libraries operate in the traditional mode. Their application of IT is limited.

2.4. Digital access facilities for upper secondary school students in Vietnam

There is evidence that equipping schools with ICT tools is necessary to assist students in accessing, using and attaining the expected skills for a modern society (Ly & Jalil, 2013). ICT creates opportunities for learners to access learning materials and resources in order to construct their knowledge (Jonassen, Carr, & Yueh, 1998; N. Nguyen & Williams, 2016). Therefore, this section will explore digital access/ICT access facilities for upper secondary students in Vietnam.

There is very little empirical evidence on digital access at home among high school students in Vietnam. Research mainly focuses on the use of ICT by university students and teachers. The statistics of a research project carried out by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 2013 indicated that ICT access at homes of Vietnamese students was not high. Specifically, while the Internet was widely set up in all schools, the percentage of Internet connection at home was only 12%. Also, the survey revealed that the proportion of households owning a computer was 12.5% and the number of computers was 5.61 per 100 people (UNESCO, 2013b). Although Vietnam only started using the Internet in 1997, the country's number of Internet users has increased rapidly (Belawati, 2003; Welch & Murray, 2010; Murphy, Midgley, & Farley, 2014). However, as of 2015, less than half of the population (45%) used the Internet (Vietnam E-commerce and Information Technology Agency, 2016). This number increased to 50% out of 93.95 million people in 2016 (We Are Social, 2016), but was still lower than some other Asian countries, such as Korea (92.1%) and Japan (91%) (Internet World Stats, 2016). Furthermore, digital device ownership, such as mobile phone, laptop or desktop computer, tablet device and television streaming device, was 93%, 46%, 12% and 2%, respectively (We Are Social, 2016). Although population aged 15-19 accounts for only 9.2% of the population in the country, it was found that citizens aged 15-24 displayed a propensity for being trend-leaders in using the Internet, making up 95% of the total number of Internet

users. However, they spend more time on social networking. Furthermore, 62% of them have a Smartphone (Moore Corporation, 2015). K. Ngo and Gwangyong (2014) argue that, although Vietnamese teenagers increasingly use mobile services, the use of technology applications to assist students' learning mainly depends on their awareness.

Similarly, in terms of digital access at schools, research primarily focuses on ICT integration into education among teachers. As discussed in previous sections, in recent years, Vietnam has conducted a reform in education in order to replace a teacher-centred model by a student-centred one (Vietnamese Government, 2005). UNESCO (2005) and Peeraer and Van Petegem (2011) indicate that integration of ICT in education is considered an appropriate method to promote a student-centred approach. Therefore, integration of ICT in the country's education system is being promoted to reach the educational goals (MOET, 2001, 2008). In 2001, the MOET provided instructions to enhance teaching, training and applying IT into education for the period 2001-2005. It mainly aimed to develop infrastructure and deliver IT training for students and teachers (MOET, 2001; UNESCO, 2013b). The application of ICT in education has been implemented in almost all schools and educational institutions across the country. Teachers can use computers in management activities and teaching, while students have started to learn how to use computers at primary education level. The programme model, "electronic classrooms and schools", is being piloted on a large scale.

The implementation of ICT integration into education is fostered in order to encourage the development of a student-centred learning environment as well as support students in becoming independent learners. Specifically, in 2008, the MOET officially launched the "Year of ICT" in the school year 2008-2009 in order to provide all schools with basic Internet access (MOET, 2008). The MOET has been working closely with various technology companies to improve the level of ICT access across schools. For example, since 2008, Vietnam's schools have received support from Viettel[15] to set up Internet connections. The MOET also plans to develop the Education Management Information System (EMIS) that assists schools in accessing resources (UNESCO, 2013b). Additionally, the Strategy for Development of Vietnam's Information and Communications Technology till 2010 and orientations toward 2020 states that, as of 2010,

[15] Viettel is a Vietnam's Telecom Company.

> Most officials, clerks and teachers at all levels, doctors, nurses, university and college students, students of professional, vocational and high schools, 50 percent of secondary students and over 30% of the population can explore ICT applications and utilise the Internet (The Prime Minister of Vietnam, 2005, p. 2)

ICT access of students and teachers was improved, but it was found that the application of ICT in teaching practice remained limited and did not satisfy the need of the education transition (UNESCO, 2013b). Vietnam is still "an emerging developing country at the beginning of integrating ICT in education" (Peeraer & Van Petegem, 2011, p. 974). A survey conducted by UNESCO nearly 20 years ago found that, as of 2000, about 80% of secondary schools (out of 1,760) had at least one computer, but only a few primary schools (out of 22,200) had set up computer rooms (Belawati, 2003). At the present time, these figures may have changed following new ICT policies having been issued. For example, all schools in Vietnam currently have Internet access (UNESCO, 2013b). This may affect students' learning opportunities in general and digital information access in particular. Nevertheless, the current level of ICT integration and access still lags behind some other Asian countries (UNESCO, 2013b). The plan of equipping institutions with ICT tools is divided into phases. At present, it principally concentrates on enhancing access for managers, teaching staff and administrative staff. Computer rooms are primarily available for students when they attend subjects related to ICT (Peeraer & Van Petegem, 2012). In practice, this policy not only applies to university students, but also to pupils in schools.

2.5. Summary

The chapter drew a picture of the macro-environment of the study. From what has been discussed, it can be seen that Vietnam is struggling to renovate the education system from a traditional mode to a new system, one which facilitates the development of learners. This is demonstrated through recent educational policies, foreign language teaching and learning projects, and the integration of ICT into the education system. Although some initial positive results have been achieved, there is still a big gap between the established educational goals and practice. Therefore, much more effort needs to be paid to improving the education system. This study is an attempt to fulfil the above objective by investigating the practice of IL teaching and learning in Vietnam's upper secondary schools and then introducing an appropriate IL teaching model for them.

CHAPTER THREE: LITERATURE REVIEW

3.1. Information literacy scope

3.1.1. The concept of information literacy

This section aims to explore current definitions of IL by affording a summary of the development of the notion and drawing parallels that exist between these definitions. IL has received great attention from researchers and practitioners since its inception to date (Johnston & Webber, 2003; Neely, 2006b; M. Gross & Latham, 2007; Folk, 2014). IL has many definitions and its own canon of research output and theoretical perspectives (Andretta, 2007; Leaning, 2009; Whitworth, 2014a). However, at present, there is no universal definition of IL that is agreed by all research communities around the world (UNESCO, 2011a; Foo et al., 2014). The concept of IL has been reviewed by several authors, such as Kuhlthau (1987), Behrens (1994), Doyle (1994), McClure (1994), Carbo (1997), A. Mutch (1997), Snavely and Cooper (1997), Bawden (2001), Johnston and Webber (2003) and Virkus (2003, 2013). In the study presented here, the most prevalent IL concepts have been described and analysed with a view to identifying synergies and commonalities between them.

Information has profoundly affected every aspect of human life (UNESCO, 2011a). For that reason, controlling and handling information is essential for individuals. In the digital age, individuals face many challenges in handling and using information resources effectively to meet their own information needs particularly, because the quality, format and channels of information continue to expand and change at a bewildering pace (ACRL, 2000; A. Martin & Williamson, 2003; Welker, Fry, McCarthy, & Komlos, 2010; Rozzi-Ochs, Egelhoff, Jackson, & Zelmanowitz, 2012; E. Schmidt & Cohen, 2013; CILIP, 2014; Foo et al., 2014). Therefore, the importance of IL cannot be denied as it helps us survive in an ever-changing information environment (Hubbard, 1987; Foo et al., 2014). The emergence of IL as an issue at a global level, along with the increase in the number of international conferences, publications and research projects around the world (UNESCO, 2004; Neely, 2006b; UNESCO, 2006; A. Johnson, Sproles, & Detmering, 2010; Bruce, 2011; Graham, 2012; CILIP, 2013; Walton & Hepworth, 2013), indicates its significance. It is considered a fundamental requirement in lifelong learning (A. Mutch, 1997; ACRL, 2000; Kurbanoglu et al., 2006; Price et al., 2011; Secker & Coonan, 2011) and has been identified as essential for the 21st-century (ALA, 1989; Rader, 1991; Bundy, 2004; Eisenberg, Lowe, & Spitzer, 2004; UNESCO, 2004; Breivik, 2005; Scharf, 2013;

UNESCO, 2013a). Furthermore, recent research points out that IL is an indispensable component for enhancing professional skills in the workplace as well as encouraging an informed citizenry and governance in a democratic society (M. Smith & Hepworth, 2007; Lloyd, 2009; Naimpally, Ramachandran, & Smith, 2012; Lawal, Stilwell, Kuhn, & Underwood, 2013; Jinadu & Kaur, 2014). UNESCO (2006) and Walton and Hepworth (2013) add weight to the significance of the concept by indicating that IL expresses the freedom of people, in other words, human rights. Thus, equipping students with a high level of IL is necessary to help them be successful in the school, the workplace and personal lives (M. Gross & Latham, 2007; S. Chu, 2012; CILIP, 2013). For example, the body of knowledge that students receive from their universities will soon be outdated, so knowing how to handle information after leaving university is essential to help them engage with an ever-changing information environment. In the educational environment, schools are striving to prepare students to meet the changes of the information environment (Hubbard, 1987; Kuhlthau, 2003; Kuhlthau, Maniotes, & Caspari, 2007; M. Smith & Hepworth, 2007; D. Williams & Wavell, 2007; Hongisto & Sormunen, 2010). At the same time, librarians are expected to hold "a lead role in the development of students' information literacy skills" (CILIP, 2014, p. 45). Libraries are expected to instruct their users how to access and use information along with providing information services (Library and Information Association of New Zealand Aotearoa, 2001; Kelley & Orr, 2003; AASL, 2007; Jinadu & Kaur, 2014). Despite the important role of IL being widely acknowledged and a call for help from librarians, there is still a lack of IL programmes implemented in educational institutions in general, and the school setting in particular (Bundy, 1999; Seamans, 2002; Hepworth, 2003; Pickard & Dixon, 2004; M. Gross & Latham, 2007; M. Smith & Hepworth, 2007; Shenton, Pickard, & Johnson, 2014). This problem might result from the lack of awareness of the complex nature of the information engagement process from educators and learners (Pickard & Dixon, 2004). For that reason, to date, learners have not been equipped with expected IL capability (J. Schacter & Dorr, 1998; Lazonder, 2000; Venezky, 2000; Branch, 2003; Law & Chu, 2005; Foster, 2006; S. Chu, Tse, & Chow, 2011). Thus, "lack of information literacy skills" becomes "a global phenomenon" (Andretta, 2005, p. 8).

IL could be considered a 'multi-faceted' concept (Andretta, 2005). This means IL can be interpreted and defined in many dissimilar manners or from different perspectives (Webber & Johnston, 2000; Johnston & Webber, 2003; Hepworth & Walton, 2009; Price et al.,

2011; Chang et al., 2012; T. Liu & Sun, 2012). Hepworth (2000) highlights two main approaches to IL: (1) identifying separate skills and attitudes that can be taught and assessed, and (2) examining the information literate mind-set accompanied with the information experiences of an individual. Bruce, Hughes, and Somerville (2012, p. 524) provide a supplementary idea by dividing the nuances in IL into two categories: "(1) the skills associated with using information in an ever-expanding range of contexts, representing a functional view of information and information literacy, and (2) the process of using information to learn, including communicating and creating in these contexts, representing transformative interpretations of information and information literacy." The former category emphasises the skills-based approach, while the latter focuses on "the informed learning approach to information literacy" (Bruce & Hughes, 2010, p. 2).

Many authors acknowledge IL as a wide range of skills or abilities. In other words, the skills-based approach has been applied to research and definitions on IL. This point will be addressed in the definitions below.

In 1974, the phrase "information literacy" was first used by Paul Zurkowski (Behrens, 1994; Bruce, 1997a; Andretta, 2005; Laxman, 2010; Pinto et al., 2010; UNESCO, 2011a). Zurkowski, in his own definition, sees IL as 'techniques and skills' in relation to the work environment and, specifically, problem-solving (Bawden, 2001). Similarly, the definition given by Burchinal (1976) also emphasises problem-solving, but IL is refined as a set of skills, including locating and using information. Meanwhile, in the early use of the concept, Owens (1976) links IL with democracy and the freedom to make decisions.

Information science researchers then involved technology in their IL definitions (Umbach, 1998; Chang et al., 2012). Specifically, the concept was redefined by Kuhlthau, but she describes IL advances in IT. She gives emphasis to the ability of recognising information need, seeking, managing, reading and using information to make informed decisions under the impact of technical and social changes (Kuhlthau, 1987).

Demo (1986) and Behrens (1994) cited a significant definition produced by Martin Tessmer (1985) that also concentrates on the ability to access and evaluate information in order to satisfy the information needs of the users. Similarly, the most influential definition to date is from ALA which states IL as a set of abilities allowing individuals to "recognize

when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (ALA, 1989, p. 1). ALA also stresses that "information literate people are those who have learned how to learn…They are people prepared for lifelong learning, because they can always find the information needed for any task or decision at hand" (ALA, 1989, p. 1). This process indicates the practice of searching for, selecting and evaluating information, as well as allows the user to create new ideas to interconnect to other people using a range of technological devices. This definition also regards IL as a set of skills and puts the emphasis on a lifelong learning context, showing that IL is required to promote independent learning (Andretta, 2005), which equips people with the necessary capacities to enable them to learn during the course of life. Rudasill (1998), Plotnick (1999), Eisenberg, Spitzer, and Lowe (2004) and S. Chu (2012) assert that ALA's IL definition can be seen as the groundwork for the later IL definitions. This can be demonstrated in definitions introduced by Doyle (1992), Todd, Lamb, and McNicholas (1992), Goad (2002), Sturges and Feather (2003), Harrod and Prytherch (2005) and Chandler and Munday (2011). They make a similar point to ALA's definition in respect of IL as a set of abilities to engage with information, such as accessing, evaluating and using information from different sources to solve a problem.

In a somewhat similar use of the term, the UK's Chartered Institute of Library and Information Professionals (CILIP) views IL as "knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner" (CILIP, 2013). One well-known IL definition was developed, in 2011, by the Society of College, National and University Libraries (SCONUL). This body provides a description of how an information literate individual might reveal "an awareness of how they gather, use, manage, synthesise and create information and data in an ethical manner and will have the information skills to do so effectively" (SCONUL, 2011, p. 3). It can be seen that the IL definitions provided by ALA (1989), CILIP (2013) and SCONUL (2011) have a common coverage of the stages of being information literate corresponding with explanations from other authors/organisations mentioned previously, but the difference is that these definitions highlight an ethical dimension. Ethical elements are a question of great interest, because publishing and using information nowadays is becoming easier than ever. Therefore, users should pay more attention to ethical issues when interacting with information to avoid derogations, for example, plagiarism.

Bruce provides a different perspective to researching and defining IL. She proposes that IL should be based on the understanding of the users through their information experiences (Bruce, 1997b). She suggests that IL is a compound of diverse manners of engaging with information rather than being a set of skills, competencies and features (Bruce, Edwards, & Lupton, 2006). These will be explored further in the IL models section (Section 3.1.2.7).

Sharing the same points of view with Bruce, Coonan strongly argues that it is necessary to reconsider the perception of IL. It should be regarded as a process to develop "high-level intellectual and metacognitive behaviours and approaches" rather than a set of skills and competences (Coonan, 2011, p. 20). Hepworth and Walton (2009, p. 10) explain the term in a holistic view as "a complex set of abilities which enable individuals to: engage critically with and make sense of the world, its knowledge and participate effectively in learning to make use of the information landscape as well as contributing to it." Meanwhile, Johnston and Webber (2004) regard IL as the adoption of efficient and ethical IB.

Papen and Virkus believe that the skills-based approach should make room for an understanding based on information practice (Papen, 2013; Virkus, 2013). This is the result of the emergence of the term 'information practice', which is defined by Savolainen as "a set of socially and culturally established ways to identify, seek, use and share the information available in various sources" (Savolainen, 2008, cited in Virkus, 2013, p. 251). Lloyd (2012, p. 772), by examining how people connect with the information landscape that forms their settings or practices, sees IL "as a socially enacted practice." The sociocultural perspective of IL views "how people's use of information cannot be meaningfully separated from the tools that are an integral part of social practices" (Limberg, Sundin, & Talja, 2012, p. 95). Instead of identifying IL as a set of skills, this point of view recognises IL in its relationship with the information setting, which has a strong influence on how people understand information.

Information is "connected to larger cultural, historical, social and political systems" (Norgaard, Arp, & Woodard, 2003, p. 126). Meanwhile, literacy is also a culturally situated phenomenon (Accardi, Drabinski, & Kumbier, 2014). By bringing together 'information' and 'literacy', IL becomes a cultural concept. The cultural nature of IL has been explored in a number of recent studies because the development of IL in non-Western

countries has received the attention of researchers. Based on studies on IL education in Asian countries, Dorner indicates that "the diversity in populations, politics, cultures, and levels of economic prosperity is immense and greatly affects IL and ILE across the region" (Dorner, 2017, p. 47). It is suggested that the local context in general and local cultural norms in particular needs to be considered in order to promote the development and success of IL programmes (Gorman, 2003; Dorner & Gorman, 2006; Horton, 2007; Dorner & Gorman, 2011; Hicks, 2013).

Many authors regard IL as an overarching term that reinforces other literacies, for example, Bruce (2004) and Walton (2009). In the same way, SCONUL views IL as "an umbrella term" that comprises other notions, such as digital, visual and media literacies, academic literacy, information handling, information skills, data curation and data management (SCONUL, 2011, p. 3). In recent years, IL has begun to appear in the plural form, such as 'information literacies' and 'multi-literacies' (Virkus, 2013, p. 251).

At the present time, many authors/organisations are in need of updating their IL definition to make the term correspond to the ever-changing information environment and variations in IT; the Association of College and Research Libraries (ACRL) is considered a typical example (Association of College and Research Libraries Standards Review Task Force, 2012). In 2015, ACRL introduced their new IL definition and a new model known as 'Framework for Information Literacy for Higher Education'. ACRL states IL to be "the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning" (ACRL, 2015, p. 3). The above definition demonstrates that ACRL has left the skills-based approach in defining the concept. The new definition puts emphasis on self-reflection and sees the development of IL in a close relationship with communities.

Researchers have found that 'information skills' and IL are sometimes labelled as synonyms (A. Mackenzie et al., 2002). This can be seen in the following definition that states IL to be "a skill that involves being able to use information successfully, including finding information, searching using various tools (e.g., Internet, databases) and being able to critically evaluate the results" (Open University, 2003, no page). In addition, Stubbings and Brine (2003) note that, at Loughborough University, 'information skills' and IL are

used to express the similar sense. Nevertheless, Bruce (1997b) and Virkus (2003) argue that 'information skills' are understood as important parts of the broader notion of IL. Bruce (1997b) believes that information skills are closely linked to the use of information. At the same time, Andretta (2007) found that SCONUL only retreated from its earlier position of rejecting the term IL in favour of information skills to set up a Working Group for Information Literacy in 2005. In conclusion, it can be said that IL is the overarching concept and information skills are within that.

Jacobson and Mackey (2013) recently suggested that the original definition of IL should be expanded. Information researchers have made several attempts to refresh IL, and the terms 'metaliteracy' and 'transliteracy' were born to enhance the notion of IL (Jacobson & Gibson, 2013). Specifically, the term 'transliteracy' refers to "the ability to read, write and interact across a range of platforms, tools and media from signing and orality through handwriting, print, TV, radio and film, to digital social networks" (S. Thomas et al., 2007, no page). Meanwhile, metaliteracy is considered "a conceptual framework for information literacy that diminishes theoretical differences, builds practical connections, and reinforces central lifelong learning goals among different literacy types" (Mackey & Jacobson, 2011, p. 76).

According to Webber and Johnston (2000), the comparison of definitions on IL has a common coverage in that they mostly refer to a process that includes recognising information need, constructing search, selecting source, evaluating information, synthesising information and using information. In practice, the skills-based approach has been recommended by many librarians, researchers and organisations. This is demonstrated by the results of the survey conducted at the Staffordshire Conference in 2006 that explored the perceptions of IL from different perspectives, including the institution, the faculty, the librarian and the students (Andretta, Pope, & Walton, 2008). In this conference, the participants were required to rank the statements in four posters in terms of importance. In the first poster, the six statements devised by Bruce et al. (2006), which are Content Frame, Competency Frame, Learning to Learn Frame, Personal Relevance Frame, Social Impact Frame and Relational Frame, were rated. This survey indicated that statement 2, 'the competency frame' – IL is a set of competencies or skills, was widely selected by the participants (Andretta et al., 2008). Generally speaking, this

reveals that the skills-based approach is still widely accepted by many practitioners and researchers (Andretta et al., 2008).

According to what is presented above, it can be seen that there are many different definitions of IL given by various institutions and individuals based on different benchmarks. A useful summary of the breadth of conceptualisation of IL is given by Kerr who states that "Definitions of information literacy range from being equipped with discrete generic skills, constructing knowledge, critical thinking, enabling lifelong learning, a process of knowing, a process of acquiring new meaning and understanding, enabling the effective utilization of information for a purpose, and a complex of ways of experiencing information use" (Kerr, 2010, p. 19). Even if IL is approached from different viewpoints, the principal point of IL is being competent and confident in an ever-changing information environment (IDS & ITOCA, 2010). The competence and confidence will help individuals become independent and lifelong learners (Bruce, 2004). It can be seen that IL is an effective tool to support people become lifelong learners who have the ability to learn independently during the course of their life. Individuals ought to cultivate the necessary skills to interact with information effectively. This is needed to deploy their thinking strategies. At the same time, they must be aware of the value of thinking strategies or thinking capabilities. From the above discussion, IL can be regarded as the process of becoming information literate in order to enable independent and self-directed learning. This process starts with being equipped with skills or abilities to engage effectively with information in various formats and then moves to metacognitive behaviours, such as critical evaluation, knowledge creation, argument construction and self-criticism.

3.1.2. Information literacy models and frameworks

According to Hughes, Bruce, and Edwards (2007), models play a very important role in IB/information use/IL fields, because they show the complex nature of information and how people engage with it. In practice, various IL learning and teaching models have been generated (Shenton & Pickard, 2014) and they are utilised in numerous institutions across the world. Price et al. (2011) point out that researchers and organisations increasingly tend to develop IL models with specific outcomes rather than simply defining what IL is. The study reviews here the most prevalent IL models. This section starts with the Big6 (Eisenberg & Berkowitz, 1990), the AASL standards (AASL, 2007), and the Media and Information Literacy Curriculum (MIL) (UNESCO, 2011b), which mainly focus on school

settings. This is followed by IL frameworks and models that are primarily developed for HE, such as ACRL's model/framework (ACRL, 2000, 2015), the Australian & New Zealand Institute for Information Literacy framework (ANZIIL) (Bundy, 2004), Seven Pillars of Information Literacy (SCONUL, 2011), Bruce's IL models (Bruce, 1997b; Bruce & Edwards, 2007), A New Curriculum for Information Literacy (ANCIL) (Secker & Coonan, 2011) and Radical Information Literacy (Whitworth, 2014b).

3.1.2.1. The Big6

Michael B. Eisenberg and Robert E. Berkowitz introduced the Big6 in 1990. It provides a methodical tactic to information problem-solving (Eisenberg & Berkowitz, 1990). This model is considered a strategy that helps individuals satisfy their own information needs effectively and efficiently (Eisenberg & Berkowitz, 1990). This model is intended for kindergarten through twelfth-grade students and has been widely applied in schools in the US.

The Big6 model is broken down into six steps with two sub-levels per step (see Appendix 1, Section 1 for further details). The six steps are organised as follows:

1. Task definition: the strategy starts with a precise understanding of the conditions of the problem for which information is required.
2. Information-seeking strategies: the second step is identifying the range of possible information sources that are available to solve the problem or task.
3. Location and access: the third step is the implementation of the selected information-seeking strategies with the aim of obtaining the desired information resources to meet the defined task and then getting to appropriate information.
4. Use of information: the fourth step is interacting with the information which has been selected.
5. Synthesis: the fifth step is presenting the information in an appropriate format to meet the requirements of the task.
6. Evaluation: the final step is the evaluation of the completion of the task with regards to how effectively and efficiently the task was carried out.

(Eisenberg & Berkowitz, 1990)

Eisenberg and Berkowitz (1990) indicate that the Big6 is at variance with models that concentrate on the research process in that it can be applied to any information problem or decision-making situation. Furthermore, this model does not require students to do things in the same way. In other words, students do not need to follow an undeviating or step-by-step process. The idea of incorporating training into a school's programme is stressed as the preferred approach in this model rather than providing instructions as a separate course (Seaman, 2001). This model affords a more rational and consecutive method to information seeking and utilisation (Andretta, 2007). Nonetheless, the ethical and collaborative elements are not mentioned in this model (Walton, 2009).

3.1.2.2. Standards for the 21st-Century Learner

AASL and the Association for Educational Communications and Technology (AECT) introduced the Nine Information Literacy Standards for Student Learning to deliver a frame and instructions for assessing the K-12 students' IL level (AASL & AECT, 1998). This model has been widely used in many states in the US at different educational levels (S. Chu, 2012). It contains three main categories (including IL, independent learning and social responsibility), nine standards and 29 indicators with a range of outcomes associated with the services delivered by school library media programmes (see Appendix 1, Section 2 for further details). The standards and indicators are presented at a general level; therefore, they can be adjusted to satisfy the specific goals of institutions. Under the first category, named IL, three components: accessing, evaluating and using information, are emphasised to define an information literate individual. According to S. Chu (2012), cognitive, meta-cognitive, affective and socio-cultural dimensions are involved in the model.

In 2007, the Standards for the 21st-Century Learner (AASL, 2007) was developed to suit the changing information environment. This model is known as a new set of standards which is based on the Nine Information Literacy Standards for Student Learning (AASL & AECT, 1998). However, the new AASL model does not aim to replace the old one. The AASL model is based on nine common beliefs which put emphasis on issues surrounding reading, inquiry, ethical behaviour, technology skills, equitable access, learning and school libraries.

The standards are organised within four key goals:

- Inquire, think critically and gain knowledge
- Draw conclusions, make informed decisions, apply knowledge to new situations and create new knowledge
- Share knowledge and participate ethically and productively as members of our democratic society
- Pursue personal and aesthetic growth

(AASL, 2007, p. 3)

Each standard is then divided into four sub-sections: skills, dispositions in action, responsibilities and self-assessment strategies; and there are indicators under each sub-section (AASL, 2007) (see Appendix 1, Section 3 for further details).

Similar to the old model, the new AASL standards still give emphasis to the importance of IL in student learning and attempt to augment the significance of library media programmes (Needham, 2010). The standards are based on elements which are considered the foundation of learning, such as reading, inquiry and technology (Arnone & Reynolds, 2009; Mardis & Dickinson, 2009). This model also makes an attempt to incorporate cognitive processes and affective elements (Farmer, 2013). AASL's model designates learning goals which students need to achieve, but does not provide a straightforward structure to follow. In other words, it does not show specific methods to reach the standards (Farmer, 2013).

3.1.2.3. Media and information literacy curriculum

In 2011, UNESCO introduced a MIL curriculum for teachers in order to encourage the development of information and media societies. The curriculum brings together media literacy and IL to provide a holistic approach to literacy (UNESCO, 2011b). It would "support teachers in the development of critical questions and approaches related to the design, implementation and evaluation of media and information literacy programs for secondary students" (C. Wilson, 2012, p. 16). The curriculum is developed based on three key themes:

- Knowledge and understanding of media and information for democratic discourses and social participation.
- Evaluation of media texts and information sources.

- Production and use of media and information.

These are linked with six key areas of general education and teacher development: policy and vision, curriculum and assessment, media and information, organisation and administration, pedagogy, and teacher professional development (UNESCO, 2011b, p. 23).

The curriculum contains nine core modules and five non-core modules. The modules concentrate on areas, such as new and traditional media, representation, media languages, audience, news media and information ethics, advertising, and IL and library skills. Learning objectives, pedagogical approaches, sample activities for working with secondary students, and assessment recommendations are provided under each module.

The curriculum has been translated into 12 languages for use (States News Service, 2016); and it is also being applied in the formal national teacher education in several countries, for example, Morocco and Brazil (States News Service, 2013).

The highlight of this curriculum is it allows educators and practitioners to adapt easily to the local context of their countries because of its flexibility (C. Wilson, 2012). It can also be equally applied in both print and audiovisual environment (UNESCO, 2011b).

The focus of the curriculum is teachers as it is developed based on the perspective that "teachers are the gateway to literate societies" (UNESCO, 2017). Teachers are considered facilitators who help students become media and information literate. It is therefore mainly offered for teacher education in MIL (C. Wilson, 2012).

3.1.2.4. Framework for Information Literacy for Higher Education

One of the IL models that is widely used by HE institutions is "Information Literacy Competency Standards for Higher Education" (M. Gross & Latham, 2007), released in 2000 by ACRL[16]. ACRL's standards extend the Information Literacy Standards for Student Learning - the standards and guidelines describe capabilities for K-12 students produced by AASL and AECT (1988) to provide continuity in learning to students at all levels (ACRL, 2000; Foo et al., 2014). According to ACRL (2000), information literate individuals have the capability of:

[16] ACRL is a unit of ALA.

- Determining the extent of information needed;
- Accessing the needed information effectively and efficiently;
- Evaluating information and its sources critically;
- Incorporating selected information into their knowledge base;
- Using information effectively to accomplish a specific purpose;
- Understanding the economic, legal and social issues surrounding the use of information, and accessing and using information ethically and legally.

(ACRL, 2000, pp. 2-3)

This model includes five standards, 22 performance indicators and the expected results (see Appendix 1, Section 4 for further details). They are utilised to offer assistance to the development of methods, instruments and approaches for evaluating students' learning outcomes in HE.

Five standards are presented as follows:

- Standard One: the information literate student determines the nature and extent of the information needed.
- Standard Two: the information literate student accesses needed information effectively and efficiently.
- Standard Three: the information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.
- Standard Four: the information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.
- Standard Five: the information literate student understands many of the economic, legal and social issues surrounding the use of information and accesses and uses information ethically and legally.

(ACRL, 2000)

In this model, skills are described from simple to more complex. Specifically, for simple skills, individuals are expected to be able to identify their information needs and know how to find information to satisfy them. The more complicated skills involve evaluating information effectively (Lau, 2008). The fundamental cognitive learning results concerning

finding, evaluating, using and citing information are also encapsulated in ACRL's standards (Association of College and Research Libraries Standards Review Task Force, 2012).

According to Virkus (2003), this 'skills-based' and 'measurable' model is not proposed by some researchers, but it is considered a good start when providing goals and showing ways to assess students' IL level. Therefore, it is still being used by many institutions to assess students' IL (Neely & Ferguson, 2006). Also, it is still being translated to several languages for use, such as German, French, Greek and Spanish (Neely, 2006b). Furthermore, many libraries and educational institutions have developed new IL standards based on ACRL's model and apply it to their institutions' IL programmes (Lindauer, Arp, & Woodard, 2004; M. Gross & Latham, 2007; Burkhardt, 2016). For instance, the ACRL model is the foundation for the development of the Australian and New Zealand Information Literacy Framework (ANZIIL)[17] (Foo et al., 2014). However, the ACRL model does not suggest any methods that can be used to measure the outcomes (Knight, 2006).

It is more than ten years since the model was introduced in 2000. Today, the information environment changes, specifically the Internet, affects the manner in which individuals generate, analyse and authenticate information. It was suggested that ACRL's IL model should be revised to reflect these transformations (Banks, 2013). The Association of College and Research Libraries Standards Review Task Force also confirms that the model "should not be reapproved as they exist but should be extensively revised" (Association of College and Research Libraries Standards Review Task Force, 2012, p. 1). In addition, the model must be revised to meet the AASL standards (AASL, 2007), which provide an updated understanding of IL, because one of the preliminary purposes of the original ACRL standards was to offer a range of expectations for students moving from K-12 to HE (Association of College and Research Libraries Standards Review Task Force, 2012). Based on the new AASL standards (AASL, 2007), the ACRL model needs modification to help students develop the information capabilities that they have achieved in high schools (Farmer, 2013).

[17] The ANZIIL is discussed in Section 3.1.2.5.

Consequently, ACRL updated their IL standards. A Delphi study was conducted by the Association of College and Research Libraries Standards Review Task Force to develop a new model named "Framework for Information Literacy for Higher Education" (ACRL, 2015). The new ACRL framework is based on the threshold concept which is considered a gateway to a broader understanding of thinking methods and practices in a discipline (ACRL, 2015) (see Appendix 1, Section 5 for further details). The six threshold concepts are:

- Authority is constructed and contextual
- Information creation as a process
- Information has value
- Research as inquiry
- Scholarship as conversation
- Searching as strategic exploration (ACRL, 2015, p. 2)

It can be seen that the framework does not show performance indicators and the expected outcomes as did the original standards. Additionally, it does not give instructors information relating to how to apply the framework into their classroom. For that reason, instructors need to establish learning outcomes grounded on the frames, knowledge practices and dispositions which match the specific goals of their institutions (Burkhardt, 2016). The framework also stresses the idea of integrating IL into students' academic programme through the collaboration of librarians, faculties and administrators (ACRL, 2015; Burkhardt, 2016).

According to ACRL (2015), the new framework has solved some limitations of the existing model, such as moving beyond a limited understanding of the conception of IL which applies the skills-based approach, and emphasising on collaborative elements, students' contributions and other aspects of critical thinking (e.g., attitudes, emotions, dispositions), not only cognitive elements. At the same time, a set of dispositions under each frame in the new framework is considered the continuous development in learning from K-12 to HE (ACRL, 2015).

3.1.2.5. Australian & New Zealand Institute for Information Literacy Framework

The ANZIIL model was generated in 2001 by the Council of Australian Librarians (CAUL) based on the ACRL model (ACRL, 2000) and then updated in 2003 (Bundy, 2004; Andretta, 2005). The model extends the original ACRL model (ACRL, 2000) by adding an extra standard (Andretta, 2005) (see Appendix 1, Section 6 for further details). Similar to other IL models, for example, the Big6, the ANZIIL model indicates that becoming information literate cannot follow a linear approach and it is recommended to integrate teaching IL into the curriculum (Bundy, 2004). As with many other existing IL models, a set of IL skills, including finding, evaluating and using information, is also mentioned in the model.

The ANZIIL model is based on the following principles which indicate that information literate individuals:

- engage in independent learning through constructing new meaning, understanding and knowledge
- derive satisfaction and personal fulfilment from using information wisely
- individually and collectively search for and use information for decision-making and problem-solving in order to address personal, professional and societal issues
- demonstrate social responsibility through a commitment to lifelong learning and community participation (Bundy, 2004, p. 11)

Based on the above principles, the ANZIIL model was generated with six standards:

- Standard 1: the information literate person recognises the need for information and determines the nature and extent of the information needed
- Standard 2: the information literate person finds needed information effectively and efficiently
- Standard 3: the information literate person critically evaluates information and the information seeking process
- Standard 4: the information literate person manages information collected or generated
- Standard 5: the information literate person applies prior and new information to construct new concepts or create new understandings

- Standard 6: the information literate person uses information with understanding and acknowledges the cultural, ethical, economic, legal and social issues surrounding the use of information (Bundy, 2004, p. 11)

The model has been used by many institutions, for example, Australian National University, Canberra, Bond University, Central Queensland University and Curtin University of Technology.

The model has several strong points. Ease of application is one of the model's strengths, because it is produced with measurable learning outcomes and examples (Andretta, 2005). Knowledge-construction is also applied in the model in order to describe the learning process that underpins IL education (Andretta, 2005). Additionally, it emphasises the importance of "critical discernment and reasoning" (Bundy, 2004, p. 4). This can be seen in standard 3: "the information literate person critically evaluates information and the information seeking process" (Bundy, 2004, p. 11). The ANZIIL standards can be implemented at different levels, such as institution, programme and student (Andretta, 2005).

Like all other IL models, the ANZIIL model does not indicate how to deal with failing the information gathering process. In addition, cognitive elements are not mentioned in the model. Also, according to Peacock (2004), it does not clearly specify how to implement IL instructions effectively.

3.1.2.6. Seven Pillars of Information Literacy model

In 2011, SCONUL updated, expanded and released a new version of the Seven Pillars of Information Literacy model (SCONUL, 2011) to substitute the old one which was introduced in 1999 (SCONUL, 1999). The model is organised into seven pillars: identify, scope, plan, gather, evaluate, manage and present. A set of competencies, attitudes and behaviours which is considered the key of IL development in HE is included under each pillar (SCONUL, 2011) (see Appendix 1, Section 7 for further details). The model is presented in the figure below.

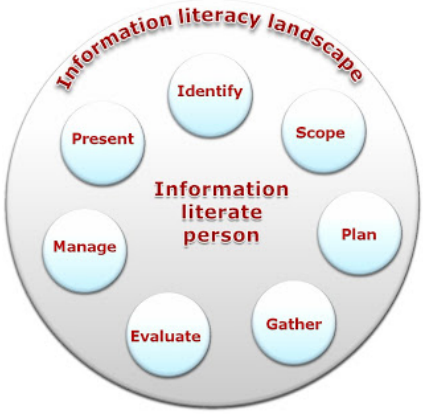


Figure 1. The Seven Pillars Model

Source: SCONUL (2011, p. 4)

Similar to the ACRL model (ACRL, 2000) and the ANZIIL model (Bundy, 2004), the SCONUL model also involves standards that concentrate on personal characteristics, ranging from basic skills (e.g. identify) to the more complex (e.g. evaluate) (Johnston & Webber, 2003). Like the Big6, it indicates that learners can develop IL skills independently rather than following a step-by-step or linear process (SCONUL, 2011). A highlight of this model is flexibility in adapting the core skills of IL to different contexts and learner groups (Association of College and Research Libraries Standards Review Task Force, 2012; Dalton, 2013). In particular, this model is presented as a 'three-dimensional circular' model for HE and offers a wide range of 'lenses', for instance, research lens and digital literacy lens (Association of College and Research Libraries Standards Review Task Force, 2012), to help different groups of learners apply it in an appropriate way (SCONUL, 2011). This is also seen as an advantage of the new version over the old one (Bent & Stubbings, 2011). A number of libraries have developed new IL standards based on the SCONUL model as well as applying it into their institutions' IL programmes.

However, similar to the ACRL model (ACRL, 2000) and the ANZIIL model (Bundy, 2004), the SCONUL model does not provide any suggestions or guidelines regarding how it should be delivered. In other words, the model indicates the competencies which are needed to become information literate, but does not show how to achieve them.

3.1.2.7. The Relational model of information literacy

Bruce developed an IL model entitled 'The seven faces of information literacy' following a study of users' experiences of information use (Bruce, 1997b). The model consists of seven ways of experiencing information, ranging from "information technology conception" to "wisdom conception" (see Appendix 1, Section 8 for further details), as follows:

> Category one: the IT conception
>
> IL is seen as using IT for retrieval and communication.
>
> Category two: the information sources conception
>
> IL is seen as finding information located in information sources
>
> Category three: the information process conception
>
> IL is seen as executing a process
>
> Category four: the information control conception
>
> IL is seen as controlling information
>
> Category five: the knowledge construction conception
>
> IL is seen as building up a personal knowledge base in a new area of interest
>
> Category six: the knowledge extension conception
>
> IL is seen as working with knowledge and personal perspectives adopted in such a way that novel insights are gained.
>
> Category seven: the wisdom conception
>
> IL is seen as using information wisely for the benefit of others.
>
> (Bruce, 1997b)

Bruce goes beyond the skill-based approach to conceptions, because she believes that IL is not a linear process and a set of skills (Johnston & Webber, 2003). Thus, it can be said that this model introduces a new approach to IL education and research (Rader, 2002). According to Hughes et al. (2007), the focal point of this model is the learners. Specifically, it gives prominence to learners' practical information experiences rather than IL scholars' views. It is closely linked to the HE setting in the same way as some other IL models, such as the ACRL model for example (Bruce, 1997b). However, she shows the limitations of the model. The model primarily concentrates on the Australian HE setting and is based on the information experience of information educators rather than students (Bruce, 1997b). These may affect the effectiveness of IL education programmes.

Later work by Bruce, Edward and Lupton introduced a new model to IL education known as "Six frames for Information Literacy Education" (see Appendix 1, Section 9 for further details). The model is based on different approaches to IL, information, curriculum focus, content and assessment (Bruce et al., 2006).

Six frames for information literacy education are presented as follows:

1) The Content Frame - Knowledge about the world of information
2) The Competency Frame - A set of competencies or skills
3) The Learning to Learn Frame - A way of learning
4) The Personal Relevance Frame - Contextual and situated social practices
5) The Social Impact Frame - Power relationships in society and social responsibility
6) The Relational Frame

(Bruce et al., 2006)

In this model, it is encouraged to adopt a relational frame of IL in IL education. This frame is based on an understanding of learning as discerning things in different ways. This approach directs learners to discern more effectively the phenomena related to IL (Bruce et al., 2006). Furthermore, the frame sees the students and information in a close relationship (Bruce et al., 2006). Therefore, the synthesis of different interaction methods with information can be found in the relational frame, which might consist of other frames, as presented above. Hughes et al. (2007) indicate that the relational model of IL, based on the seven faces of IL, provides a more holistic view of IL, in comparison with other models, such as the ANZIIL, the ACRL and the SCONUL model, and considers reflection as important to the process of engaging with information.

3.1.2.8. A New Curriculum for Information Literacy

The ANCIL model is the result of a Delphi study which involved many information and education specialists and was conducted by Coonan and Secker in 2011 with the aim of creating a practical curriculum for IL teaching in the UK's HE for the next five years (see Appendix 1, Section 10 for further details). The ANCIL is being used by several of the UK's universities as a method of auditing their IL provision across the entire institution (Secker & Coonan, 2013). This curriculum concentrates on "active, reflective and transferable elements" in learning (Coonan, Secker, Wrathall, & Webster, 2012, p. 5).

The curriculum consists of 10 strands (Figure 2) with specific learning outcomes, example activities and example assessment.

- Transition from school to HE
- Becoming an independent learner
- Developing academic literacies
- Mapping and evaluating the information landscape
- Resource discovery in your discipline
- Managing information
- Ethical dimension of information
- Presenting and communicating knowledge
- Synthesising information and creating new knowledge
- Social dimension of IL

(Secker & Coonan, 2013)

Each strand comprises four broad levels: key skills, subject-specific competences, advanced information handling and learning to learn (Secker & Coonan, 2013).

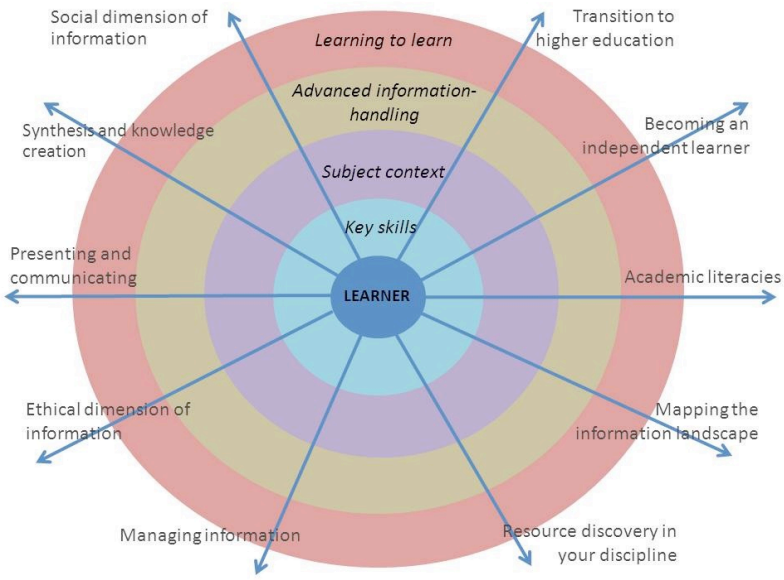


Figure 2. ANCIL information literacy mapping

Source: Coonan et al. (2012, p. 4)

Like Bruce, Secker and Coonan reject the skills-based approach. They argue that IL involves "skills, competences, behaviours and values around information" which help

individuals achieve a specific goal (Coonan et al., 2012, p. 4). According to Coonan et al. (2012), the ANCIL is based on the views of Bruce and Hepworth and Walton. Specifically, Bruce et al. (2006, p. 6) believe that IL is a "complex of different ways of interacting with information", while Hepworth and Walton (2009) regard IL as a combination of several factors, such as behaviours, cognition, metacognition and affection, that help individuals complete a task in a given context.

One of the advantages of this curriculum is flexibility, because it can be applied in various different teaching forms, such as short course, frontloaded training sessions, etc., although it is better to integrate the model into the academic programme (Coonan et al., 2012).

3.1.2.9. Radical information literacy

In 2014, Andrew Whitworth introduced 'Radical information literacy', which is considered an "important and challenging" work (Inskip, 2014). In the book, the author defines IL as "the application of principles of informed, direct democracy to the scrutiny of information exchange within organisations and communities" (Whitworth, 2014b, p. 1). His view mainly concentrates on IL as deeply rooted in the context in which it is enacted. According to such a view, IL must necessarily be understood and treated as situated in local practice in multiple contexts. A key dimension of the concept of radical IL is to view it as a means for empowerment and emancipation in everyday life, whether that life is in communities, organisations, universities or elsewhere (Pilerot, 2015). However, this is a theoretical work. It is necessary to explore how to apply the theory into practice.

3.1.3. Information literacy in the workplace

Although the IL landscape has developed at a fast pace, IL in the workplace has received little attention from researchers and practitioners (Bundy, 1999; Bruce, 2000; Oman, 2001; Cheuk, 2002; O'Sullivan, 2002; Feldman, 2004; Kirton & Barham, 2005; Breivik & Gee, 2006; Xue, Majid, & Foo, 2010; Walton & Hepworth, 2013). Almost all researchers mainly focus on exploring IL in practical settings instead of defining IL for the workplace, and there is no agreed definitions of IL in the workplace to date (William, Cooper, & Wavell, 2014). In the work environment, the term IL is presented in different manners (O'Sullivan, 2002), such as "effective use of information" (Xue et al., 2010), "information literacy practice" (Lloyd, 2011) and i-Skills (Hepworth & Smith, 2008).

Secker and Coonan (2013) point out that, not only those who are stakeholders in the education sector, but also individuals in the workplace sector are strongly influenced by the challenges posed by the new information environment. Therefore, the important role of IL is not only emphasised in the educational environment, but also in the workplace sector (Cheuk, 1998; Abell & Oxbrow, 2001; Donnelly & Craddock, 2002; Majid et al., 2011; Chang et al., 2012). In a global economy and labour market that is increasingly fiercely competitive, individuals must equip themselves with a high level of the work skills in general, and IL in particular (Oman, 2001; Asselin, 2004; De Saulles, 2007; S. Chu, 2012). These skills help them engage with information efficiently through the use of IT. This is helpful in knowledge management, which is considered an essential sector in companies (O'Sullivan, 2002), as well as reduces the pressure that is caused by the information explosion, thereby serving their work more effectively (S. Chu, 2012; Lloyd, 2013). Evidence suggests that IL greatly affects the success of the workers and their employers (A. Mutch, 2000). In a broader understanding, IL can be regarded as a means to help organisations achieve their goals (Lundh, Limberg, & Lloyd, 2013). However, IL in the information-rich workplace is different in comparison with IL in educational organisations, because information in the work environment is more structured in subject disciplines (A. Mutch, 2000; Kirton & Barham, 2005; Hepworth & Smith, 2008; O'Farrill, 2008; Lloyd, 2013; William et al., 2014; Forster, 2017). Information professionals therefore need to understand "how IL is experienced by those professions they support and facilitate", for example, lawyer, doctor, nurse or social worker (Forster, 2017, p. 2).

The emergence of the term "information literate firm" demonstrates that IL in an organisation is important as an "information literate individual" (Gasteen & O'Sullivan, 2000). Hence, students must be equipped with the capability to engage with information effectively from when they are still at school to becoming successful professionals (S. Chu, 2012; Hepworth & Walton, 2013; Folk, 2014). This is currently considered the priority of educational institutions (Department of Education Training and Youth Affairs, 2000; Johnston & Webber, 2003; Sokoloff, 2012). Several IL models mention developing IL capability for students in order to help them move into their future career, such as Bruce's (1997b) Seven Faces of IL and ACRL's Information Literacy Competency Standards for Higher Education (ACRL, 2000). Bruce indicates the relationship between her IL model and the working environment by putting emphasis on IL in the contexts in which it is experienced (Bruce, 1999, 2011). Meanwhile, the ACRL model (ACRL, 2000) extends

their IL model by going "beyond formal classroom settings" and approaching the workplace (ACRL, 2000, p4). IL in the workplace is also found in the socio-cultural theory introduced by Lloyd (2009). Furthermore, Secker and Coonan's (2013) IL model shows that one of the strands of IL in the new information environment is "the transition to the workplace and everyday life."

3.1.4. Information literacy assessment

The literature on IL assessment methods and students' IL capability is reviewed in the following sections. The number of works regarding IL assessment has rapidly grown in recent years (Warmkessel, 2007; Folk, 2014), especially in the UK, the US and Australia (Rosman, Mayer, & Krampen, 2015a). Although there is a great body of research related to IL assessment, it is still in its initial stages (Neely, 2006b; Radcliff, Jensen, Salem, Burhanna, & Gedeon, 2007; Walsh, 2009; Rosman et al., 2015a). Furthermore, while some suggestions are provided to measure IL, there is, however, no an agreement among researchers in measuring this concept (Rosman et al., 2015a). Assessing IL is essential to explore what information literate individuals are, identify what current programmes need to be improved and inform suggestions to enhance students' IL level (Warmkessel, 2007; Oakleaf & Kaske, 2009; Ali, Abu-Hassan, Daud, & Jusoff, 2010; Chang et al., 2012). For that reason, Warmkessel (2007) introduces an assessment cycle showing that it is necessary to identify what to measure, how to measure and how to use the assessment results. Additionally, Lindauer et al. (2004) suggest that investigators should consider the following three areas when conducting IL assessment: learning environment, IL programme components and student learning outcomes.

3.1.4.1. Information literacy assessment methods

As discussed above, IL assessment is necessary to explore individuals' IL level. Therefore, establishing measurement tools is necessary in order to assess IL. There have been many tools developed to assess IL to cater for various different purposes (Warmkessel, 2007; Walsh, 2009) at different levels, including organisation, nationally and internationally (Rozzi-Ochs et al., 2012). Each method has its own strengths and weaknesses (Judith & Ada, 2007; Warmkessel, 2007; Walsh, 2009; Ali et al., 2010; Chang et al., 2012). Therefore, depending on specific conditions and context, assessors can choose the appropriate assessment methods.

Researchers and organisations suggest different assessment approaches. McCulley (2009) indicates that there are three main approaches to measure IL, including knowledge tests and surveys, performance assessments and informal assessments. According to the International Federation of Library Associations and Institutions (IFLA) (2012), IL assessment can be conducted in the three following ways: (1) prescriptive or diagnostic, which measures IL before the instruction is designed; (2) formative, conducted while the instruction is in progress; and (3) summative, which occurs at the end of instruction. The following sections will review IL assessment based on the approaches introduced by McCulley (2009).

3.1.4.1.1. Knowledge tests and surveys

Knowledge tests are considered a traditional assessment approach that often measures what participants know instead of what they can do (McCulley, 2009). Knowledge tests and surveys are usually expressed as providing a range of questions for participants to answer (Chang et al., 2012). With respect to the multiple-choice questionnaire test employed in this study, it is considered a typical method of knowledge tests and the most common way used to measure IL (Scharf, Elliot, Huey, Briller, & Joshi, 2007; Walsh, 2009). This technique is preferred because of ease of use, convenience, low cost (Oakleaf, 2008; Walsh, 2009), being less time-consuming, ease of marking, being a wide-ranging knowledge test, ease of comparison, high reliability and ease of administration (Fourie & van Niekerk, 2001; Scharf et al., 2007; Sonley, Turner, Myer, & Cotton, 2007; Oakleaf, 2008). This kind of test also allows investigators to cover a large sample of participants as well as re-use the test instrument (Chang et al., 2012).

In addition to the advantages explained above, this approach also shows several drawbacks. Although many investigators use this method to assess IL, it is not easy to produce a good quality test with this method (Walsh, 2009). Some authors believe that it primarily focuses on measuring lower level skills rather than higher level cognitive skills (Scharf et al., 2007; Oakleaf, 2008; McCulley, 2009; Walsh, 2009; Walton & Hepworth, 2013). Therefore, it can be assumed that this method is not the most comprehensive test (Oakleaf, 2008). Also, participants can guess the answers (Oakleaf, 2008), and in the event they answer questions under someone's guidance, test results may not accurately reflect their actual IL level (Chang et al., 2012). In fact, there is no guarantee that respondents complete the test without any help, especially web-based tests. At the same time, the

method does not allow investigators to measure the learner's actual information skills in solving real life situations (Fourie & van Niekerk, 2001; Dunn, 2002).

Several IL testing tools have been developed, for example, Standardized Assessment of Information Literacy Skills (SAILS) (Kent State University, 2016), TRAILS (Kent State University Libraries, 2016), Information Literacy Test (ILT) (James Madison University, 2016) and Beile Test of Information Literacy for Education (B-TILED) (Beile, 2005).

Specifically, one of the standardised tests that is widely accepted by educators, librarians and students is TRAILS (Owen, 2010). This IL test is developed based on the AASL standards (AASL, 2007) and those from the Common Core State Standards Initiative[18]. It is a project that was devised at Kent State University Libraries. TRAILS is considered a knowledge test with multiple-choice questions covering several IL components, such as develop topic; identify potential sources; develop, use, and revise search strategies; evaluate sources and information; and recognise how to use information responsibly, ethically and legally. The test is divided into four levels, including 3rd, 6th, 9th and 12th grade. It is free online for both school librarians and students to access (Kent State University Libraries, 2016).

As for SAILS, it is a web-based standardised test of IL skills and is based on the ACRL standards. The test was introduced by Kent State University. Similar to TRAILS, SAILS is a multiple-choice test, but its target respondents are HE students instead of school students like TRAILS. According to Scharf et al. (2007, p. 464), SAILS is emerging to "become the standard indirect assessment and cross-institutional benchmarking tools, and neither includes student-constructed responses." Examples of using SAILS can be found in projects conducted by Radcliff, Salem, O'Connor, Burhanna, and Gedeon (2007) and Rumble and Noe (2009).

Similarly, ILT is also a multiple-choice test that contains 60 computerised items. It is the result of the collaboration between the James Madison University (JMU) Center for

[18] The Common Core State Standards Initiative, an educational initiative in the US, aims to develop a set of college- and career-ready standards for kindergarten through 12th grade in English language arts/literacy and mathematics under the collaboration of the National Governors Association Center for Best Practices (NGA Center) and the Council of Chief State School Officers (CCSSO) from 2009 (Common Core State Standards Initiative, 2017).

Assessment and Research Studies and JMU Libraries. The test is used to measure students' IL in HE related to four out of five Information Literacy Competency Standards for Higher Education (Wise, Cameron, Yang, & Davis, 2009).

B-TILED is a 22 multiple-choice questions test that is established to measure education-specific information knowledge of undergraduate students enrolled in teacher education programmes. Similar to the ILT test, it is based on the Information Literacy Competency Standards for Higher Education (ACRL, 2000) and the National Educational Technology Standards for Teacher[19] (Beile, 2005).

As for the Procedural Information-seeking Knowledge test (PIKE), it is a scenario-based test, concentrating on both declarative and procedural knowledge (Rosman, Mayer, & Krampen, 2015b).

There is a great body of research using this method to measure IL. The experiences of IL surveys developed for use in HE can be found in recent studies conducted by Folk (2014), Scales and Von Seggern (2014), Mohammad (2014), Sharun, Thomson, Goebel, and Knoch (2014), Hsieh, Dawson, and Carlin (2013), Fain (2011), Carr, Iredell, Newton-Smith, and Clark (2011), Hossain Shoeb (2011) and Ali et al. (2010). For older examples, see Rumble and Noe (2009), M. Gross and Latham (2007), O. Liu, Jackson, and Ling (2008), Judith and Ada (2007), Cameron, Wise, and Lottridge (2007), Mittermeyer (2005), Ondrusek, Dent, Bonadie-Joseph, and Williams (2005), Samson and Millet (2003), O'Connor, Radcliff, and Gedeon (2002), Dunn (2002) and Samson (2000). This method can also be found in studies conducted recently in high schools by S. Chu (2012), Chang et al. (2012) and Chang, Foo, and Majid (2014).

3.1.4.1.2. Performance tests

Performance tests, unlike the knowledge tests mentioned above, require users to create products that demonstrate their ability in IL through completing realistic tasks under the observation of investigators (Halttunen & Järvelin, 2005; Oakleaf, 2008; McCulley, 2009).

[19] The National Educational Technology Standards for Teacher, now called the IEST standards, has been introduced by the International Society for Technology in Education. It provides standards related to using technology in teaching and learning (International Society for Technology in Education, 2017).

It is considered an authentic assessment that allows assessors to measure higher level IL skills (Oakleaf, 2008; McCulley, 2009) as well as users' ability in resolving real life situations (Halttunen & Järvelin, 2005). Therefore, it is assumed that this approach can provide highly reliable results (Oakleaf, 2008; Chang et al., 2012). In addition, this kind of test can be integrated into learning activities (Oakleaf, 2008).

However, in comparison with other assessment methods, performance tests consume more time (Radcliff, Jensen, et al., 2007; McCulley, 2009) and much higher resources (Oakleaf, 2008; Chang et al., 2012). Furthermore, while standardised tests allow assessors to reuse, performance tests may have limited generalisability to other settings and populations (Oakleaf, 2008).

Performance tests can be set up in several different formats, such as assignment, bibliography analysis, portfolios, rubrics, etc. The experiences in developing performance tests can be found in projects conducted by Katz (2007), Katz et al. (2008) and Hignite, Margavio, and Margavio (2009). In Katz's (2007) work, an Internet-delivered assessment was established to measure students' IL in terms of researching, organising and communicating information using technology at two levels, including core and advance. Similarly, in Hignite et al.'s (2009) research, a 15-task ICT exam was delivered to students to measure their cognitive and/or critical thinking skills.

According to Walsh (2009), IL components can be measured using bibliographies produced by students. For bibliography analysis examples, see research projects conducted by Young and Ackerson (1995), Fei, Jan, and Leith (2006), R. Greene and Bowser (2006), Knight (2006), Ali et al. (2010), van Helvoort (2010) and Scales and Von Seggern (2014). Meanwhile, students' progress can be demonstrated through portfolios (Sonley et al., 2007). Examples of using portfolios to measure IL can be found in Snavely and Wright (2003), Sonley et al. (2007), Scharf et al. (2007), C. Johnson, Anelli, Galbraith, and Green (2011) and Chen and Chen (2013).

With regard to using assignment, this allows investigators to measure higher order IL cognitive skills (Walton & Hepworth, 2013). Nevertheless, according to Walsh (2009), there is not much research using this method to measure IL (Walsh, 2009). For studies which involve using assignment to assess students' IL, see Nutefall (2004), Halttunen and

Järvelin (2005), Perruso-Brown and Kingsley-Wilson (2010), Rozzi-Ochs et al. (2012), Scharf (2013), Walton and Hepworth (2013) and Leichner, Peter, Mayer, and Krampen (2014).

As for rubrics, by using scoring systems, it is considered a systematic approach to measure what students have achieved in terms of the learning objectives (Hsieh et al., 2013). Investigators are allowed to measure students' higher order thinking (Oakleaf, 2008; van Helvoort, 2010). For rubric examples, see Knight (2006) and van Helvoort (2010).

Using observation to measure students' IL was explained by Dunn (2002) and Novotny and Cahoy (2006). This technique requires investigators to observe students at play. Along with observation and other assessment techniques explained above, some other methods have been employed to measure individuals' IL, such as simulation (Newell, 2004; Roberts, 2004) and Quiz (Judith & Ada, 2007; Price et al., 2011).

3.1.4.1.3. Informal assessments

Informal assessments are integrated into IL training sessions to measure some IL components (Radcliff, Jensen, et al., 2007). According to Chang et al. (2012), this kind of test is easy to use, but provides very limited value. An example of using informal assessment can be found in Radcliff, Jensen, et al. (2007) and Gilchrist and Zald (2008).

3.1.4.2. Information literacy capability of students

Students' IL capability has been explored in a number of studies and some noticeable findings regarding information search, information evaluation and information use were found.

The IL capability between genders has been explored in several studies (S. Chu et al., 2011; Mohammad, 2014) and has demonstrated that there is an imbalance in IL capability between male and female students (Klinger, Shulha, & Wade-Woolley, 2010). Although girls have the advantage over boys in that females are better in IL (Wagemaker, 1996; Hignite et al., 2009; S. Chu, 2012; T. Liu & Sun, 2012; Chang et al., 2014) and reading literacy (Wagemaker, 1996; Mullis, Martin, Gonzalez, & Kennedy, 2003; Mullis, Martin, Kennedy, & Foy, 2007; Mullis, Martin, Foy, & Drucker, 2012), males outdistance their peers in IT skills (Meredyth, Russell, Blackwood, Thomas, & Wise, 1999; Contreras,

Colom, Shih, Álava, & Santacreu, 2001). However, both genders show the same patterns in the early use of computers (Calvert, Rideout, Woolard, Barr, & Strouse, 2005). Therefore, issues related to gender have been considered in several information science frameworks, for example, Pickard and Dixon's (2004) work.

As for information search skill, research has found that users did not spend much effort in searching for information (Hepworth, 2003; Griffiths & Brophy, 2005), displaying a propensity of using simple search techniques to find information (Ojala, 2002; Seamans, 2002; Head & Eisenberg, 2009; Majid et al., 2011; Pickard, Gannon-Leary, & Coventry, 2011; UNESCO, 2013a). In addition, instead of using academic search tools, for example, library websites (OCLC, 2003; Pickard et al., 2011), users prefer to use Google and online search engines to search for information (OCLC, 2003; Fallows, 2005; Godwin, 2006; Andersen, Tufte, Rasmussen, & Chan, 2007; Sonley et al., 2007; Head & Eisenberg, 2009; Herring, 2009; S. Chu et al., 2011; Pickard et al., 2011; D. Chu et al., 2012; Sokoloff, 2012) as well as to use web-sources (Lombardo & Miree, 2003; Large, Nesset, & Beheshti, 2008; S. Chu et al., 2011; Qayyum & Williamson, 2014). Similarly, formal journal sources and libraries are not used much by teachers (D. Williams & Coles, 2007). This may result from the ease of use and the convenience of Google and online search engines (Godwin, 2006; Duffy, Liying, & Ong, 2010). As a result, users may not be able to find relevant information beyond Google if it does not provide them the expected search results (De Saulles, 2007). The usefulness of Google and online search engines cannot be denied. However, the overuse of this kind of search tool may negatively affect students' IL skills and the quality of search results (R. Anderson, 2005; Buschman & Warner, 2005). The development of the Internet and IT systems not only brings great opportunities for information users (Calvert et al., 2005; M. Smith & Hepworth, 2007), but also challenges (Shenton et al., 2014). Research indicates that students do not automatically become information literate, although they are provided instructions in the use of technology (Boekhorst, 2000 cited in Virkus, 2003; S. Chu, 2012). Having the ability to handle technology and use the Internet does not mean becoming information literate (Cheuk, 2002; Bartlett & Miller, 2011). Therefore, there is a need to improve students' ability to use online search engines and electronic sources (Thompson, 2003; Kenney, 2004; Buschman & Warner, 2005; Callicott & Vaughn, 2005; Wleklinski, 2005), their technological competence (Candy, 2002) and academic resources (Griffiths & Brophy, 2005).

Regarding information evaluation skill, research indicates that this skill is a weakness of students (Adams, 1999; Godwin, 2006; Knight, 2006; P. Williams & Rowlands, 2007; Ali et al., 2010; Chang et al., 2012; Pickard, Shenton, & Johnson, 2014). Similar to searching for information, users tend to use under-evaluated information sources rather than making an attempt to evaluate them (Hirsh, 1999; Grimes & Boening, 2001; Knight, 2006; Pickard et al., 2014; Shenton et al., 2014). Students mainly use simple techniques to evaluate information sources (Dresang, 2005; University College London, 2008; Shenton et al., 2014). Different techniques that are used by searchers to evaluate information sources can be found in studies conducted by Lindsay (1976), Hertzum, Andersen, Andersen, and Hansen (2002), McNicol (2003), M. Smith and Hepworth (2007), M. Gross and Latham (2007), P. Williams and Rowlands (2007), Large et al. (2008), F. Harris (2008), Crawford and Irving (2009), Herring (2009), Lim (2009), Wynne et al. (2009), Duffy et al. (2010), Pickard et al. (2011) and Ofcom (2016).

Studies do not provide homogeneous results concerning the ethical use of information. Some show that young people understand how to access and use information ethically (P. Williams & Rowlands, 2007), while others demonstrate that students are faced with a lack of understanding of intellectual property (Shih & Allen, 2007; Chang et al., 2012). Furthermore, many studies reveal that students do not respect the copyright law (Lindsay, 1976; Shih & Allen, 2007; M. Smith & Hepworth, 2007; Secker & Coonan, 2013).

3.1.4.3. Self-assessment of information literacy

Many researchers have also been paying attention to the self-assessment of IL (Walsh, 2009), especially European countries (Rosman et al., 2015a). Examples of using self-assessment can be found in Tierney (1992), Coupe (1993), Geffert and Christensen (1998), Holman (2000), Maughan (2001), Ivanitskaya, Laus, and Casey (2004), Ivanitskaya, O'Boyle, and Casey (2006), M. Gross and Latham (2007), Ackerman and Wolman (2007), Pinto (2010), K. Anderson and May (2010) and Rosman et al. (2015a).

Self-assessment allows investigators to explore IL from the viewpoint and attainment of students rather than librarians or educators (M. Gross & Latham, 2007). Reasons and motivations behind objective tests may be discovered under a self-assessment test (Rosman et al., 2015a). Motivation is reduced by both overestimation (Freund & Kasten, 2012) and underestimation (Bandura, 1994). Recognising actual ability is needed to help individuals

succeed in their environment (Ackerman & Wolman, 2007). Rosman et al. (2015a) show that self-assessment positively affects students' performance, because it allows them to identify their strengths and weaknesses. As a result, they can actively plan to improve their IL capability. In addition, Rosman et al. (2015a) indicate that IL assessment should include objective and subjective factors. Therefore, self-assessment items should be included in the survey to provide a more comprehensive assessment. Furthermore, they suggest that it should take place at the end of the test, because "self-assessments of information literacy explain a small proportion of incremental variance in information literacy above standardised tests" (Rosman et al., 2015a, p. 749). Similarly, M. Gross and Latham (2007) find that students can provide more accurate estimations of their test results after completing a test rather than before conducting it. Generally speaking, it is assumed that conducting a task helps students self-estimate their performance more adequately (Rosman et al., 2015a).

The relationship between students' actual IL skill level and self-assessment is noticeably revealed in the domain of IL (M. Gross & Latham, 2007; Rosman et al., 2015a). However, there is no final conclusion about the relationship between self-assessment and actual IL skills. A large number of researchers have found that students overestimate their actual IL skills (Coupe, 1993; Cuffe & Bruce, 1999; Maughan, 2001; Colaric, 2003; Warner, 2003; Buschman & Warner, 2005; Gravill, Compeau, & Marcolin, 2006; Harrison, Davis, Mazmanian, Thorpe, & Perrier, 2006; Ivanitskaya et al., 2006; M. Gross & Latham, 2007; Price et al., 2011; Shenton et al., 2014). Some authors demonstrate that there is a positive relationship between self-assessment and actual skills (Coupe, 1993; Ivanitskaya et al., 2006), while, on the contrary, according to Geffert and Christensen (1998), there is no correlation between self-assessment and IL test scores. Furthermore, it is demonstrated that students with below-proficient IL skills exaggerate their ability (M. Gross & Latham, 2012; Latham & Gross, 2013). At the same time, K. Anderson and May (2010) show that students' self-perception of skills and their actual performance often do not match to each other.

Some authors have conducted projects relating to self-efficacy. For some researchers, for example, Rosman et al. (2015a), they believe that self-efficacy is one form of self-assessment. Self-efficacy is also the focus of research conducted by Kurbanoglu et al. (2006) and Rosman et al. (2015a). Specifically, German psychology students were

involved in a study conducted by Rosman et al. (2015a). The research included IL self-efficacy, the PIKE-P IL test and several standardised information search tasks to explore the correlation between self-efficacy and IL test. This approach has made an auspicious start in assessing students' ability (Rosman et al., 2015a), because self-efficacy, particularly subjective ability, is a "core belief [that] is the foundation of human motivation, performance accomplishments, and emotional well-being" (Bandura, 2010, p. 1534).

3.1.5. Information literacy in Vietnam

This study redresses the research gap by examining IL in Vietnam's educational area; therefore, reviewing previous literature related to this context is needed. In 2001, H. S. Nguyen (2001) published an article regarding IL. This could be considered the first official publication which introduces the IL concept to Vietnam's library and information science field.

In Vietnam, there are several studies, which focus on IL in academic libraries and school libraries, but none has analysed IL delivery as part of a teaching programme. There is a case study which investigates the perceptions of stakeholders about the development and delivery of IL instructions in Vietnam's academic libraries (Diep, 2011). IL in Vietnam can also be found in the research conducted by Truong (2014). This study mainly concentrates on IL at HE level. The other is a sub-regional project that brought together seven countries, including Cambodia, Indonesia, Laos, Malaysia, the Philippines, Thailand and Vietnam, on the development of IL education through school libraries in Southeast Asia. The project aimed to examine the current state of IL education in Southeast Asia and to put forward appropriate recommendations and action plans for the greater involvement of school libraries in IL initiatives. In 2004, the project was conducted under the financial support of the Special Funds of UNESCO's Information for All Programme (Choovong & Singh, 2005). However, the focus of the project was on IL training programmes and IL educators, not students' IL learning. In that sub-regional project, three sets of questionnaires were used in all seven countries to survey school administrators, teachers and librarians. The survey results primarily concentrated on issues, such as awareness of IL, IL training, leadership, assessment and evaluation, IL support systems and school libraries.

There is much discussion about the definition of IL as mentioned above (Section 3.1.1). The skill-based approach is still applied in IL definitions proposed by Vietnamese information researchers. For example, N. Nguyen (2013) proposes that IL assists individuals in identifying their information needs and using information effectively. Similarly, Truong (2014) assumes that IL is not only a matter of information exploitation skills (online or print materials), but also other skills, such as information need orientation, information search tools use and information evaluation.

In 2006, an IL definition in developing countries was introduced by Dorner and Gorman who define IL as:

> "The ability of individuals or groups to be aware of why, how and by whom information is created, communicated and controlled, and how it contributes to the construction of knowledge; to understand when information can be used to improve their daily living or to contribute to the resolution of needs related to specific situations, such as at work or school; to know how to locate information and to critique its relevance and appropriateness to their context; to understand how to integrate relevant and appropriate information with what they already know to new construct knowledge that increases their capacity to improve their daily living or to resolve needs related to specific situations that have arisen" (Dorner & Gorman, 2006, p. 284).

This definition emphasises the contextual and cultural nature of IL that has led to differences in IL education between Western and non-Western countries (Dorner & Gorman, 2006). As mentioned above (Chapter One, Section 1.2), this thesis follows the view of Walton and Cleland (2013) who indicate that the development of IL capability ensues from a broader social setting and that IL comprises three spheres, finding, evaluating and using information, and each scope activates its own set of behavioural, cognitive, metacognitive and affective elements. This view also acknowledges the contextual nature of IL. Therefore, instead of providing a new definition for IL in Vietnam, using Walton and Cleland's (2013) viewpoint is suggested.

It is not easy to find a Vietnamese term that matches with the term IL because there is no a concise equivalent term which expresses comprehensively the connotation of the 'literacy' concept in Vietnamese. Literacy is not simply the ability to read and write. It is "able to understand, interpret and assess texts, to evaluate statements, and to be able to take a standpoint when faced with flows of contradictory messages via various media and

different types of sources…Literacy therefore extends from a mechanical skill to the ability to think critically and challenge dominant ideologies" (Limberg et al., 2012, p. 98).

The term IL is translated into different terms in Vietnamese, such as **"kiến thức thông tin"** (kiến thức: knowledge/understanding; thông tin: information), **"kỹ năng thông tin"** (kỹ năng: skill; thông tin: information), and **"năng lực thông tin"** (năng lực: competence; thông tin: information). **"Kiến thức thông tin"** is the most commonly used term by Vietnamese information researchers, for example, Tran (2006), V. V. Le (2008), Nghiem (2010), and D. T. N. Vu (2012). It is also used in the IL conferences in Vietnam, for instance, "Kiến thức thông tin – Information literacy" held in 2006 by the University of Social Sciences and Humanities – Hanoi and "Vai trò kiến thức thông tin phục vụ học tập và giảng dạy trong trường đại học" (the role of IL in supporting teaching and learning in universities) held in 2012 by the Vietnamese Library Association of Southern Academic Libraries (VILASAL); and information professional education programmes, for example, the programme offerred by the University of Social Sciences and Humanities – HCMC. IL is also translated as **"kỹ năng thông tin"**, for example, the conference "Nội dung và phương pháp thực hiện các khóa huấn luyện kỹ năng thông tin cho độc giả" (content and methods for implementing IL training courses for readers) held in 2011 by Central Library – Vietnam National University – HCMC. Meanwhile, IL is considered **"năng lực thông tin"** by several researchers, for example, T. Q. Tran (2016) and D. Tran (2016). Although IL is translated into different ways, until now there is no official discussion regarding the translation of IL into Vietnamese.

As discussed above (Chapter Three, Page 32-33), the term "**Kỹ năng thông tin**" (information skills) does not provide a comprehensive understanding of the IL concept because IL is the overarching concept and information skills are within that. Similarly, the more popular term "**Kiến thức thông tin**" (information knowledge/understanding) does not express comprehensively the connotation of IL. As discussed above, IL is the combination of many elements, including information skills. However, the term **"kiến thức thông tin"** does not represent this element because 'skill' is the ability to perform an action based on knowledge/experience to produce the desired results. Furthermore, based on the researcher's experience when conducting this study, the term **"kiến thức thông tin"** easily lead to confusion, especially for those who hear the term in the first time. They might regard it as an understanding of information around them that is published in

newspapers and journals. Although the term "**Năng lực thông tin**" (information competence) is less commonly used, it provides a more comprehensive understanding of the IL concept. Competence can be described as the combination of knowledge, skills, and experience necessary to perform successfully one own mission (Reitz, 2004) rather than just focusing on knowledge/understanding as "**kiến thức thông tin**". From the above discussion, I would suggest using "**năng lực thông tin**" (information competence) as an equivalent term to IL in Vietnamese. This provides a different way of viewing and translating IL in Vietnamese rather than finding right or wrong terms.

3.1.6. Summary to Section 3.1

A summary of IL models and frameworks can be found in Table 3:

Table 3. A summary of information literacy models and frameworks

Spheres	Big6	SCONUL	ANZIIL	AASL	ACRL	Bruce's	ANCIL	Whitworth	UNESCO's MIL curriculum
Find/ access/ locate	Task definition	Identify a personal need for information	Recognises the need for information and determines the nature and extent of the information needed	Skills, disposition in action, responsibilities, self-assessment to: - Inquire, think critically, and gain knowledge; - Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge; - Share knowledge and participate ethically and productively as members of our democratic society; - Pursue personal and aesthetic growth	The framework is based on the six threshold concepts: - Authority is Constructed and Contextual - Information Creation as a Process - Information has Value - Research as Inquiry - Scholarship as Conversation - Searching as Strategic Exploration	Six frames for IL Education: - The Content Frame - The Competency Frame - The Learning to Learn Frame - The Personal Relevance Frame - The Social Impact Frame - The Relational Frame	Skills, behaviours, approaches and values. IL development includes 10 strands: - Transition from school to HE - Becoming an independent learner - Developing academic literacies - Mapping and evaluating the information landscape - Resource discovery in your discipline - Managing information - Ethical dimension of information - Presenting and communicating knowledge - Synthesising information and creating new knowledge - Social dimension of IL	Focus on redistributing authority and stewardship	Three key areas: - Knowledge and understanding of media and information for democratic discourses and social participation - Evaluation of media texts and information sources - Production and use of media and information These are linked with six areas: policy and vision, curriculum and assessment, media and information, organisation and administration, pedagogy, and teacher professional development
	Information seeking strategies	Assess current knowledge and identify gaps	Finds needed information effectively and efficiently						
	Location and access	Construct strategies for locating information and data							
		Locate and access the information and data they need							
Evaluate/ discern	Synthesis	Review the research process and compare and evaluate information and data	Critically evaluates information and the information seeking process						
	Evaluation of information and problem-solving process	Organise information professionally and ethically	Manages information collected or generated						
Use/ communicate/ produce	Use of information	Apply the knowledge gained	Applies prior and new information to construct new concepts or create new understandings						
			Uses information with understanding and acknowledges cultural, ethical, economic, legal, and social issues surrounding the use of information						

In sum, there are many IL definitions and models/frameworks that have been developed from different perspectives and introduced by various organisations and individuals (Bruce & Edwards, 2007). IL models/frameworks from different authors/institutions also differ in scope. For instance, the Big6 (Eisenberg & Berkowitz, 1990) mainly focuses on six stages using information to solve problems, while the ANCIL (Secker & Coonan, 2011, 2013) has a broader scope, whereas the AASL models (AASL & AECT, 1988; AASL, 2007) are primarily used for compulsory education[20] and ACRL's model/framework (ACRL, 2000, 2015) is principally applied in tertiary education. Even if IL is approached from different viewpoints, authors all share the same goal is helping users be competent and confident in an ever-changing information environment (IDS & ITOCA, 2010). Furthermore, although existing IL models/frameworks put the emphasis on different aspects of IL, they generally "share a range of common element with regard to their content" (Shenton & Pickard, 2014, p. 65). For example, the ethical use of information is considered an essential component in almost all the above IL models, except the Big6. Institutions can apply IL models/frameworks based on their practical conditions. At the same time, it is suggested that individuals should develop their own personal IL models to help them improve and enhance their IL capability (Shenton & Pickard, 2014). It is recommended that, in order to build expertise in IL, individuals should start from the most basic skills, such as searching for information, evaluating and using it. This is the foundation for them to move forward to advanced levels.

Several IL models have been revised in recent years to meet the changing information environment and information needs (Association of College and Research Libraries Standards Review Task Force, 2012). ACRL is considered a typical example. At the same time, more recent IL models/frameworks appear to emphasise on the development of IL in a close relationship with communities, such as Whitworth's Radical Information Literacy (Whitworth, 2014b) and the ANCIL of Secker and Coonan (2013) rather than following the skills-based approach introduced in the earlier models. Additionally, it can be seen that IL models/frameworks developed recently are influenced by IB research, for example, the ACRL (2015) and the ANCIL (Secker & Coonan, 2013).

[20] Pre-school to 18 years of age – the shorthand used in the US and some other countries as K-12 education.

The literature also emphasises that students need to be equipped with IL skills at school level in order to become professionals with adequate skills. It is recommended that IL programmes need to be implemented in schools. Furthermore, IL level measurement is necessary in order to know what information literate individuals are or inform suggestions to improve the current IL programmes. Each assessment approach has different advantages and shortcomings. Assessors need to select an appropriate method based on the purpose of the assessment and available resources. The literature indicates that knowledge and survey tests take precedence over performance tests because of their ease of use and being less time consuming. Meanwhile, the high validity of performance tests is acknowledged, as this kind of test allows assessors to measure higher order thinking skills.

IL research also specifies a range of factors that affect the development of students' IL, such as technological and organisational, cognitive, affective and social elements, as summarised by Pickard and Dixon (2004). Similarly, Walton and Cleland (2013) show that the development of IL capability ensues from a broader social setting and that IL comprises three spheres, finding, evaluating and using information, and each scope activates its own set of behavioural, cognitive, metacognitive and affective elements.

3.2. Teaching and learning theories

This section reviews the underlying theories of learning and correlative pedagogical approaches, because proposing an IL teaching model to students in their senior years in high school in Vietnam is at the core of this study. There are many schools of thought on theoretical issues on learning (Herring, 1996). Here, in order to gain a general understanding of learning theories, the study follows the approach of Mayes and de Freitas (2004, 2013) and Beetham and Sharpe (2013b) in identifying three broad perspectives that are based on Greeno et al.'s (1996) psychological fundamental, including the associative perspective, the cognitive perspective and the situative perspective. In the same vein as J. Mayes and Fowler (1999), T. Mayes and de Freitas (2013, p. 25) regard the three perspectives in learning as "stages in a cycle" and "different aspects of the progression towards mastery of knowledge or skill." Perspectives, when applied to specific learning environments, will bring learning experiences with particular forms of learning outcomes (Oliver, Harper, Wills, Agostinho, & Hedberg, 2013). According to T. Mayes and de Freitas (2013), each of these perspectives is connected with a particular kind of pedagogy. In other words, learning theories are the foundation to establish effective approaches to

teaching (P. Thomas, 2010). Pedagogy is simply understood as "guidance to learn" (Beetham & Sharpe, 2013a, p. 1). At the same time, the term can be understood in a more complicated manner as the connection between social interactions and the institutions and practices (Beetham & Sharpe, 2013a).

3.2.1. Transmission approach in teaching

The transmission approach views learning "as something the teacher or text does to the student" (Kuhlthau et al., 2007, p. 14). This school emphasises that learners passively receive information from their teachers, and the purpose of learning is mainly memorising facts (Nola & Irzik, 2006; Kuhlthau et al., 2007). In other words, knowledge is directly and fully transmitted from teachers to students. Several studies show that this traditional approach to learning and teaching does not promote developing learners' independent thinking and active learning in the way that the constructivist approach[21] does (Streatfield & Markless, 1994; Jonassen, Peck, & Wilson, 1999; Birkhead, 2009; Streatfield, Shaper, & Rae-Scott, 2010; Chang et al., 2012; S. Chu, 2012). Therefore, it is less effective than the constructivist approach, such as inquiry-based learning or project-based learning (J. Thomas, 2000; Donham, Bishop, Kuhlthau, & Oberg, 2001; Boaler, 2002; Harada & Yoshina, 2004b; Kuhlthau, 2004; David, 2008; Hu, Kuh, & Li, 2008; Singer & Moscovici, 2008; K. Chu, 2009). As mentioned above, the body of knowledge students receive from their educational institutions will soon be outdated. In this case, the need to engage with information to construct new knowledge will emerge. If students are not encouraged to actively engage with information, developing lifelong learning, which is considered the purpose of promoting IL capability, may face many challenges. This may reduce the need to develop the required skills, for example, IL skills, to help individuals engage with information effectively.

3.2.2. Behaviourism

Behaviourism is derived from the works of Thorndike (1911), Pavlov (1927) and Skinner (1976). Based on empirical research, Thorndike introduces a psychological principle called "the law of effect" which indicates the association between behaviour, consequences and external stimuli environment (R. Gross, 2015; Mazur, 2015). Specifically, it reveals that repetition will happen to behaviours that result in pleasing consequences, whereas

[21] The constructivist approach is explained in more detail in Section 3.2.3.

recurrence will be less likely to occur to behaviours that cause unsatisfied outcomes (Gray, 2011). Furthermore, Pavlov's classical conditioning puts emphasis on modifying behaviour using preceding conditions (Lieberman, 2011). Subsequently, inspired by the Thorndike's work, Skinner introduced the principles of operant conditioning (Skinner, 1938; R. Gross, 2015). Thorndike's law of effect, Pavlov's classical conditioning and Skinner's operant conditioning formed the groundwork for behaviourism.

Through experiential research using the rate of repeatable responses, this school views learning as a change in learners' measurable and observable behaviour under the impact of the stimulus. Differential reinforcement can be used to shape behaviour through using rewards and punishment (D. Schacter, Gilber, & Wegner, 2011; Fry, Ketteridge, & Marshall, 2015). Individuals eventually select successful behaviour patterns for the rewards available (D. Schacter et al., 2011). Changes can occur through repeating the stimulus-response continuously accompanied by immediate feedback (Carlile, Jordan, & Stack, 2004; P. Thomas, 2010). In other words, experience is considered the basis of learning. Evidence suggests that associative learning is the foundation for the development of the behaviourist approach (Metaphysics Research Lab, 2016). The associative perspective puts its emphasis on the detailed nature of performance and "task analysis, defining sequences of component to - composite skills. It provides a highly focused set of objectives that are described as learning competencies" (T. Mayes & de Freitas, 2004, p. 13).

Educators who follow the constructivism school argue that learning is not simply a change of individuals' measurable and observable behaviour. Behaviourism does not promote the development of learners' thinking. Therefore, it fails in delivering learning in higher level and problem-solving (P. Thomas, 2010). However, behaviourism can still be used for the purpose of teaching and assessment of competencies that require learners to possess the requisite skills (Beetham & Sharpe, 2013b), for example, producing a skilled workforce.

3.2.3. Constructivism

Constructivism was originally generated from the works of various educational theorists, most notably, Piaget (1970), Vygotsky (1962, 1978), Bruner (1962, 1979) and Papert (1980, 1993). Piaget's theory mainly concentrates on the active role of the individual in learning. Learners add new concepts to prior knowledge to construct their own

understanding (Jones & Brader-Araje, 2002; Henson, 2003). Unlike Piaget's notion, Vygotsky's Social Development Theory focuses on the importance of social interaction in the development of cognition (Vygotsky, 1978). As regards Bruner's theories, there are agreements between the author with both Piaget and Vygotsky. However, similarities that can be seen between Bruner and Vygotsky are that both focus on the social environment of learners, more than Piaget does (McLeod, 2008). Seymour Papert developed an educational theory called constructionism that was inspired by Piaget's constructivist and experiential learning ideas (Cakir, 2008).

Constructivism, in practice, can be divided into two sub-trends, including cognitive constructivism (also known as personal constructivism, individual constructivism, radical constructivism) and social constructivism (or, sometimes called realist constructivism) (Elmborg, 2002). Specifically, cognitive constructivism primarily concentrates on the mental construction of learners' minds. Meanwhile, social constructivism, is strongly influenced by Vygotsky's works, mainly focuses on the social nature of knowledge formation and emphasises on the knowledge development of the learner in communities, such as teachers, peers, friends and society in general (Kang & Byun, 2001; Elmborg, 2002). According to Carleo (2016), collaborative work or peer interaction positively affects students' knowledge construction.

Constructivism is based on cognitive learning psychology (P. Thomas, 2010). The constructivist view of learning puts its emphasis on active knowledge construction by gaining understanding, self-regulation, goal-orientation and accumulation rather than memorising and recalling facts (T. Mayes & de Freitas, 2013). Learners construct their knowledge through their current and prior knowledge or what they can do (Piaget, 1970; Stake, 1995; Gabler & Schroeder, 2003; Kuhlthau, 2004; T. Mayes & de Freitas, 2004; Kuhlthau et al., 2007; Singer & Moscovici, 2008; T. Mayes & de Freitas, 2013). This approach enables learners to build their own knowledge "through active engagement and purposeful interaction in real world, authentic problem solving, critical thinking, and knowledge creation" (Oakleaf, 2008, p. 240) instead of fully receiving information from their teachers (Elmborg, 2002; Fosnot, 2005; K. Chu, 2009; S. Chu et al., 2011). As a result, individuals become active learners who are constructors of knowledge rather than recipients of knowledge (Lwehabura, 2007; Beetham & Sharpe, 2013a). Fosnot (2005) emphasises that this approach does not encourage breaking down concepts into discrete

subskills and teaching them out of context. Instead, the constructivist school regards learning as a "holistic experience incorporating many ways of thinking" and considers cognitive development as an essential element in learning (Kuhlthau et al., 2007, p. 27). Therefore, the modes of the constructivist approach, such as inquiry-based learning and project-based learning, promote a learner-centred learning environment (Kanuka & Anderson, 1999; Alexander & Boud, 2001; P. Thomas, 2010) which is increasingly being used to replace the old teacher-centred learning (Bundy, 2004; S. Chu, 2012). For inquiry-based learning, students are encouraged to involve aggressively in learning activities by generating queries (Harada & Yoshina, 2004a). Meanwhile, project-based learning assists learners in exploring issues in more depth without pre-defined answers (Harada, Kirio, & Yamamoto, 2008). This could be the reason to explain why the constructivist approach to teaching and learning has received the support of so many educational researchers (Lamon, 2003; Oakleaf, 2008). However, in a recent work, T. Mayes and de Freitas (2013, p. 21) argue that constructivism is not only based on the cognitive perspective, but it also stems from the associationist tradition and situative position, because it concentrates on "learning-by-doing", the role of feedback and "authentic tasks."

The constructivist approach requires students to search for meaning actively, and teachers undertake the role of a facilitator of learning (Alexander & Boud, 2001; K. Chu, 2009; S. Chu et al., 2011; T. Mayes & de Freitas, 2013). Searching for meaning actively or exploring information freely creates favourable conditions for the development of critical inquiry (River Parishes Community College, 2009). Therefore, the effective use of information is necessary (Bundy, 2004). For that reason, it is needed to equip students with a high level of IL to help them become effective information seekers and knowledge constructors (S. Chu, 2012). From what has been discussed above, it can be said that the constructivist approach creates an appropriate environment for the development of IL (Sparrow, Sparrow, & Swan, 2000; Virkus, 2003; Hepworth, 2006; Andretta, 2007) and lifelong learning (Andretta, 2005). Constructivism is especially relevant to IL skills sessions wherein the trainer needs to engage with students and build upon what they already understand. In contrast, IL helps students develop capabilities required by their schools, such as independent learning, critical thinking and reflection (Secker & Coonan, 2013). With regard to the role of teachers in students' learning, Vygotsky (1987) suggests that teachers need to provide instructions for their students' exploration through scaffolding. The scaffolding approach allows learners to take advantage of the diversity of

the supports and tools in their learning environment in order to develop their skills and understanding (D. Wood, Bruner, & Ross, 1976; Guzdial, 1994; Halttunen & Järvelin, 2005). 'Scaffolding' can be conducted by providing questions, demonstrations and hypotheses (Moran, 2007). It can be said that teachers are seen as people who help students discover and construct knowledge by solving practical problems, talking with them and asking questions.

Many studies have applied the constructivist approach to explore students' learning, such as Blumenfeld et al. (1991), Krajcik et al. (1998), Harada and Yoshina (2004a), Derry, Hmelo-Silver, Nagarajan, Chernobilsky, and Beitzel (2006), Hmelo-Silver, Duncan, and Chinn (2007), H. Schmidt, Loyens, Van Gog, and Paas (2007) and S. Chu et al. (2011). There are numerous studies showing the close relationship between the constructivist approach and technology, such as Patricia and Peter (2000), Dalgarno (2001), Nanjappa and Grant (2003), Bitter and Pierson (2005), Gagliardi (2007), Overbay, Patterson, Vasu, and Grable (2010), Boles (2011) and Kaya (2015). They reveal that technology plays an indispensable role in implementing the constructivist approach in teaching and learning.

Unlike the behaviourist approach, which believes learning can be measured and observed, constructivism requires the combination of multiple criteria and standards to evaluate individuals' learning, such as observation, dialogue or using problem-solving transfer tests (P. Thomas, 2010).

3.2.4. Situated learning

Situated learning emerged from Vygotsky's (1978) notion of learning through social development, Lave and Wenger's (1991) learning model called "Community of Practice", and J. Brown, Collins, and Duguid (1989).

Learning is considered "social practice" under the situative perspective (T. Mayes & de Freitas, 2004, p. 7). The situative view of learning gives prominence to the ability to participate in the practice of communities of learners, because this approach assumes that learning involves a process of engagement in those practices (Salomon, 1995; Driscoll, 2009; T. Mayes & de Freitas, 2013). Individuals are placed in learning communities at three different levels, individual, group and community (T. Mayes & de Freitas, 2013). Learning can occur by observing and reflecting their peers through information and

knowledge that is created and shared within the learning community. In other words, learners and the environment always interact with each other in order to help learning activities be placed in an authentic situation. Along with the development of technology, situated learning has gone beyond the real-life interaction setting to move towards a technological setting. There has been much written about the prospect of situated learning in designing a computer-based instructional programme (Herrington & Oliver, 1995).

The learner's motivation is addressed in the situative perspective (T. Mayes & de Freitas, 2013). According to Pintrich (2003) and Wlodkowski (2008), motivation is an effective teaching tool. Students' motivation could result (1) from a desire for earning rewards and avoiding punishment by satisfying the requirements of the given task, or (2) from a desire for achieving lasting knowledge (Heinström, 2006; P. Thomas, 2010). The latter, which is intrinsic motivation, is considered the core of IL. It encourages students to learn and find information independently (Crow, 2007). According to M. Smith and Hepworth (2007), assessment methods have an influence on students' extrinsic motivation. P. Thomas (2010) stresses that students' motivation can be enhanced by using positive feedback, sense of ownership and achievement. The implications of this approach for teaching and assessment are in implementing elaborate authentic opportunities for learning and designing authentic assessment (Herrington & Oliver, 1995; Beetham & Sharpe, 2013b).

The relationship between situated learning and IL can be found in the people-in-practice perspective of learning introduced by Lloyd (2012). By examining how people connect with the information landscapes that form their settings or practices, Lloyd (2012, p. 772) sees IL "as a socially enacted practice." Instead of identifying IL as a set of skills, this point of view recognises IL in its relationship with the information setting, which has a strong influence on how people understand information.

3.2.5. Summary to Section 3.2

In sum, learning is the process that brings about constant change in behaviour or thinking. This process involves several concomitant elements, such as motivation (includes intrinsic and extrinsic elements), reflection (based on feedback) and learning by doing (through engagement with peers and others).

Although there are different approaches in learning and teaching depending on different purposes, ensuring the consistency between the curriculum, teaching methods, learning environment and the assessment process when designing a pedagogical approach is essential (T. Mayes & de Freitas, 2004; Biggs & Tang, 2011). This is needed to help individuals succeed in their learning as well as assist institutions in achieving educational goals successfully.

It is shown that students need to have the ability to make informed decisions, act effectively and responsibility, and construct their own knowledge rather than rote learning or memorising answers (Farmer, 2013). Therefore, based on the learning theories outlined above, constructivism and situated learning are considered the most appropriate approaches in order to develop learners' thinking and active learning. They put learners at the centre of the learning process and emphasise the construction of knowledge through active engagement with the environment, communities and other individuals in order to solve authentic problems rather than enable them to become passive recipients of knowledge.

3.3. Information behaviour

IB has received great attention from researchers. This can be seen by the increase in the number of research and theories being developed within the field in recent years (Fisher, Erdelez, & McKechnie, 2005; Case, 2012). However, there is no agreed global definition of IB (Case, 2012). According to Fisher et al. (2005, p. xix), IB is conceptualised as "how people need, seek, manage, give and use information in different contexts." It is simply and narrowly defined as information-seeking activities by some researchers. In the study presented here the two most prevalent IB models are those introduced by Carol C. Kuhlthau and Tom D. Wilson.

3.3.1. Information behaviour models

3.3.1.1. Information Search Process Model (ISP)

The ISP was first introduced in 1991 by Kuhlthau (1992) and was then tested and updated based on empirical research spanning two decades. It describes the user's experience in seeking information through three realms: the affective (feelings), such as uncertainty and confusion; the cognitive (thoughts), such as personal knowledge and information content;

and the physical (actions). Uncertainty in the information-seeking process is considered the key point in this model (Case, 2012).

The ISP model is divided into seven stages: initiation, selection, exploration, formulation, collection, presentation and assessment (Kuhlthau et al., 2007) (Figure 3).

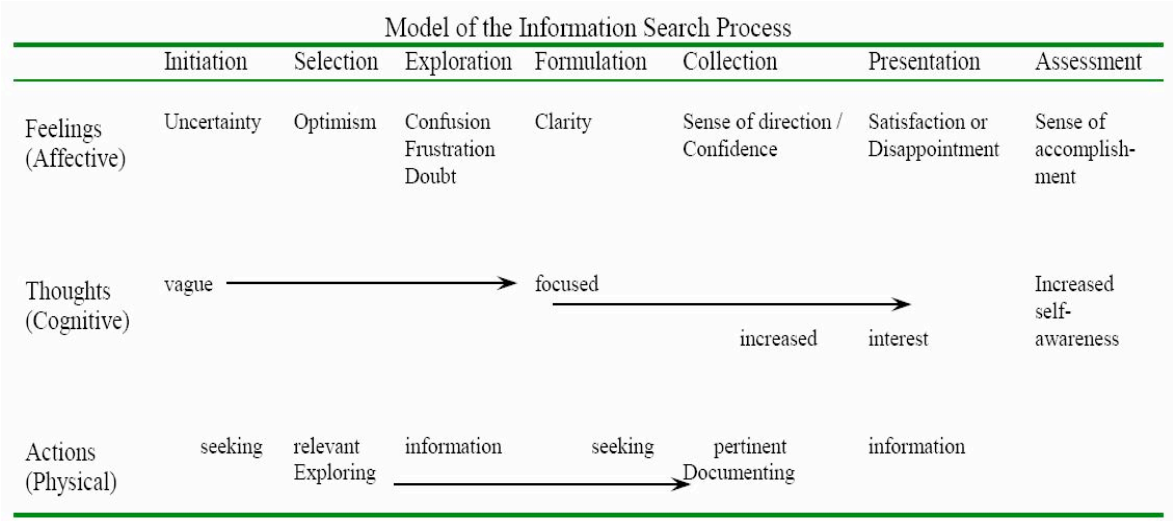


Figure 3. Model of the information search process

Source: Kuhlthau et al. (2007, p. 19)

Specifically, in the first stage, Initiation, the user recognises the information needed to perform a task. At this stage, they have to face feelings of uncertainty and apprehension. In the second stage, Selection, the information seeker identifies a topic to investigate and determines the way to proceed. The feeling of uncertainty starts to decrease and a sense of optimism begins to appear. At the third stage, Exploration, information related to the topic is located and gathered to create new knowledge based on current understanding. Feelings of uncertainty increase if the user cannot find appropriate information. Formulation, the fourth stage, sees a focused perspective created based on the information gathered in the previous stage, and this stage plays a fundamental role in the information-seeking process. At the same time, feelings of uncertainty are reduced and confidence increases. In the fifth stage, Collection, the feeling of confidence increases while uncertainty lessens. The user finds needed information to support the focused perspective in this stage. By the sixth stage, Presentation, the search is completed and the findings are prepared to present. In this stage, feelings of satisfaction or disappointment appear depending on the result of the search. The seventh and final stage is Assessment, wherein the user evaluates the search

process, reviews what has been achieved and finds out what they should do in the future (Kuhlthau, 2004; Kuhlthau et al., 2007).

It can be said that the ISP model emphasises on the constructivist approach to learning (Shannon, 2002). The constructivist approach views students as active learners; they have to make a great deal of effort to own information and create a new understanding based on their existing knowledge (Cooperstein & Kocevar-Weidinger, 2004). The model has greatly influenced the development of IL theory and practice (Hughes et al., 2007). ACRL, in the process of updating its IL model, also acknowledges the influence of Kuhlthau's research on the role of affective elements in the search process due to the changing information environment and ambiguity in the learning environment (ACRL, 2014).

3.3.1.2. Wilson's information behaviour models

Wilson's IB model was developed over two decades (Fisher et al., 2005; Case, 2012). The first model was introduced in 1981 (Figure 4) to indicate the factors leading to information seeking and the barriers inhibiting action (T. Wilson, 2005). It states that individuals conduct information seeking through the use of technology or acting as an intermediary to meet their physiological, cognitive and affective needs (T. Wilson, 1981).

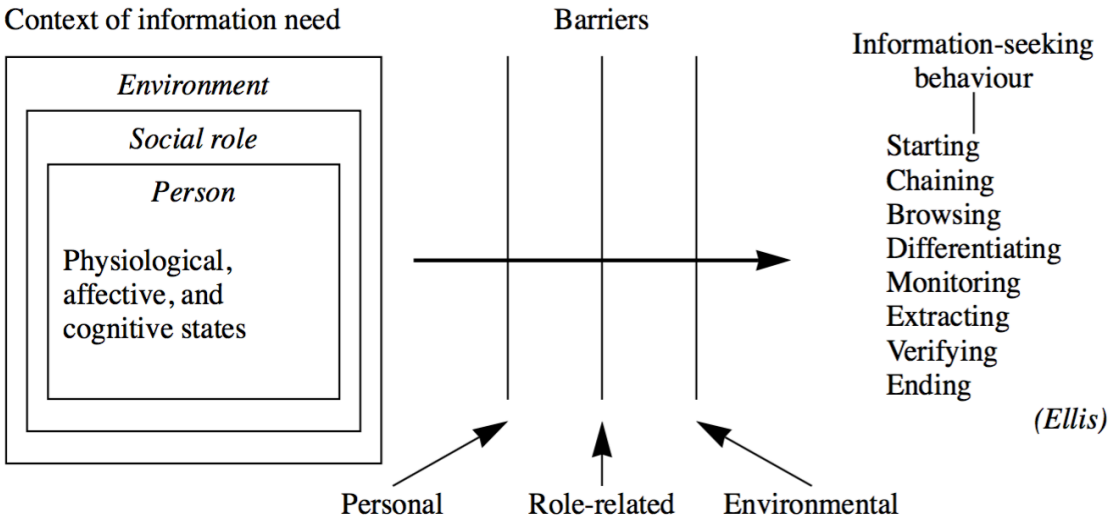


Figure 4. Wilson's 1981 information-seeking behaviour model

Source: T. Wilson (1999, p. 252)

The second model was built in 1996 (Figure 5) to add some new elements in order to show the stages experienced by individuals when looking for information. This model comprises an intermediate stage between identifying a need and the initiation of action, a redefining of the barriers and an activating mechanism stage (T. Wilson, 1997). The model is expressed in a cycle form and emphasises that the aim of information-seeking behaviour is satisfying the information need perceived of users through the engagement with information sources. The user may fail in finding relevant information and, as a result, they need to reiterate the information search process. Wilson's 1996 IB model expanded his 1981 IB model through drawing upon studies from several research areas, such as decision-making, psychology, innovation, health communication and consumer research. It involves some other theoretical models of behaviour, such as stress/coping, risk/reward theory and social learning theory (which expresses the concept of 'self-efficacy') (T. Wilson, 1999).

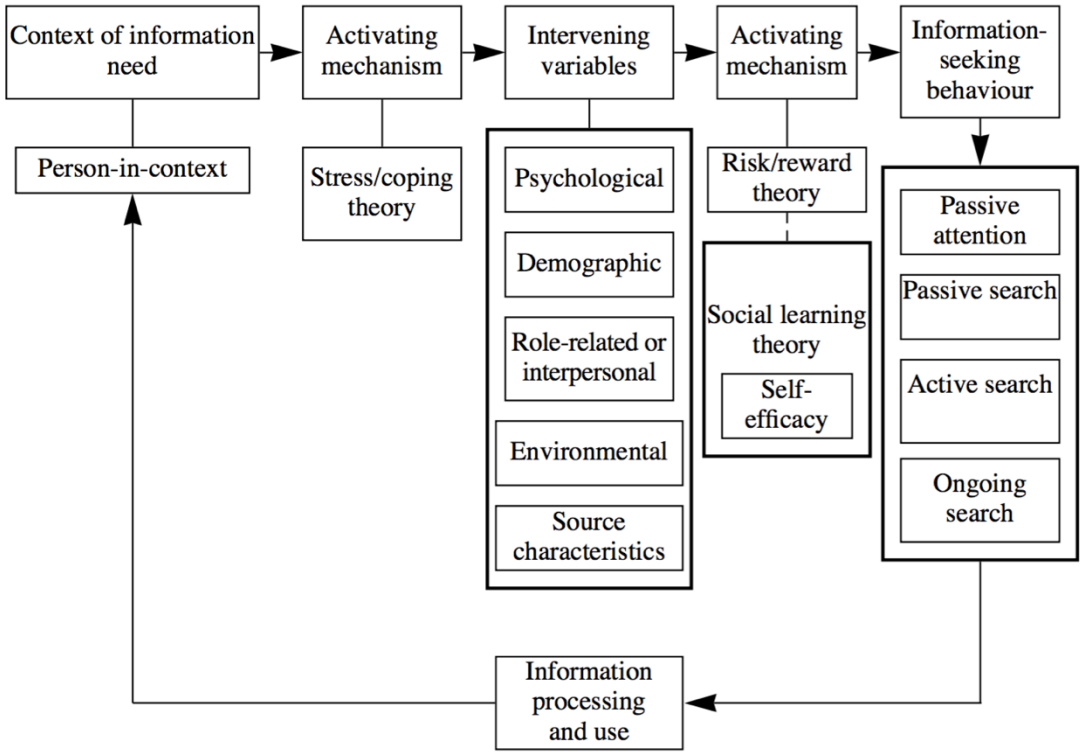


Figure 5. Wilson's 1996 information behaviour model

Source: T. Wilson (1999, p. 257)

A new IB model that brings together different areas of research in the study of IB was developed in 1999 (Figure 6) (T. Wilson, 1999; Bawden, 2006). T. Wilson (1999, p. 249) states that IB is "the totality of human behaviour in relation to sources and channels of

information, including both active and passive information seeking, and information use." In this model, research topics and IB are characterised as a series of nested fields and the general area of investigation, respectively. Information-seeking behaviour and information-searching behaviour are considered a sub-set (T. Wilson, 1999). His final model (T. Wilson, 1999) emphasises the complexities of context for information seeking (Case, 2012).

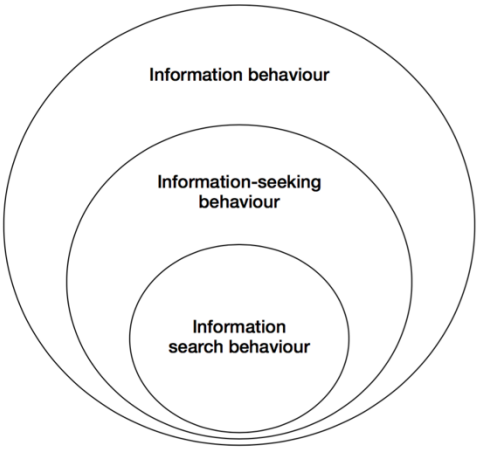


Figure 6. A nested model of the information seeking and information searching research areas

Source: T. Wilson (1999, p. 263)

3.3.2. Summary to Section 3.3

In sum, IB and IL models use the same language to refer to the engagement with information of individuals. However, IB models put emphasis on explaining the processes involved, while IL models set up standards and draw a picture of what an information literate individual is.

IB models mention some elements that are also identified in learning theories, such as motivation, reflection, feedback, emotions, failure and repetition, in which motivation could be considered a hidden reason that affects students' IL (Crawford & Irving, 2009). These elements are not presented in many IL models. However, reflection and emotion are presented in revised and newer IL models, because they are influenced by IB models, for example, the ACRL framework. Therefore, IB models may provide another way to explain students' information-seeking behaviour as well as factors that affect individuals' information engagement. At the same time, they may offer some additional features that

can be adopted when delivering an IL programme in a specific learning and teaching context.

3.4. The expanded AASL model

It was suggested that an existing IL model should be selected to examine the practice of IL teaching and learning in Vietnam's upper secondary schools. As discussed in the previous sections, IL models have been mainly developed in two educational settings, including the K-12 level and the HE environment. As the focus of this study is upper secondary schools, IL models that concentrate on IL development in the K-12 setting were reviewed more closely. The original AASL model (AASL, 2007) takes into account some of the criticisms made against other earlier models. Cognitive and affective elements are incorporated into the standards (Farmer, 2013). There is an absence of ethical and collaborative elements in the Big6 skills approach (Walton, 2009); however, ethical elements are included in the AASL model, because it is developed based on the common belief that individuals must be taught ethical behaviour in the use of information (AASL, 2007). Furthermore, the AASL model provides indicators to assist investigators in developing tools for assessing students' IL. Meanwhile, UNESCO's MIL curriculum framework, which also focuses on the secondary education environment, mainly emphasises the development of teachers' MIL competencies. It requires teachers to demonstrate necessary competencies corresponding to the elements of the framework (UNESCO, 2011b). In 2013, UNESCO introduced a global MIL assessment framework but it mainly concentrates on teachers' MIL competencies in service and in training rather than students (UNESCO, 2013a). Meanwhile, one of the objectives of this study is assessing students' IL. Under the review of the existing prevalent IL models, the study chose the Standards for the 21st-Century Learner (AASL, 2007) as its theoretical framework. The model was applied here as its focus is on the K-12 education environment and students' learning (Needham, 2010). This is appropriate to the study, because the research also concentrates on school students' IL learning.

Nevertheless, the AASL standards (AASL, 2007) are primarily used in schools in the US. It was suggested that the model should be reconsidered when applying in the Vietnamese educational context. The AASL model (AASL, 2007) is based on the educational environment in the US where English is used in the national education system. However, English is not the official language in Vietnam's schools. Vietnamese is still utilised in the education system in the country. However, teaching and learning foreign languages,

especially English, has received great attention from educators and learners in recent years, as presented in the context of the study chapter. Being proficient in English is one of the essential learning outcomes of the study programme. The aim of this is to assist learners in interacting with information more effectively and prepare the future workforce with appropriate skills. In Vietnam, an individual may encounter many challenges in engaging with information in particular, and becoming information literate in general, if they do not use foreign languages. This results from the fact that information resources and information systems in Vietnamese are not common, whereas English is one of the most widely used languages around the world (Pak, 2012; British Library, 2015; W3Techs, 2016) and many information resources are produced and published in English. Research conducted by W3Techs indicates that English was used as the content language of approximately 53.2% of the most visited websites around the world. Meanwhile, the most visited websites that used Vietnamese accounted for 0.6% (W3Techs, 2016). Consequently, the Vietnamese in general, and students in particular, who can use English gain an advantage in learning and communication as well as in accessing a great wealth of information resources.

Research demonstrates that language use affects individuals' IL. Specifically, Peyina (2010) and Chang et al. (2012) indicate that language use is a tool to engage with information. Therefore, those who have better language ability have advantages in the information engagement process. For instance, searchers can achieve success in the search of information if they know how to use synonyms (Large et al., 2008). In another situation, in using a foreign language, students may not understand the message the computer and Internet sends to them (Venezky, 2000). Also, Johnston's (2014) research indicates that English language limitations affect students' experiences of reading, accessing and translating information. A range of research conducted in Hong Kong's schools suggests that collaboration between teaching staff in three subjects, general studies, language and IT, is necessary to develop students' IL (K. Chu, 2009; S. Chu et al., 2011; D. Chu et al., 2012).

From the previous discussion, it can be seen that language proficiency affects engaging with information, for example, searching for information. For that reason, it is recommended that using foreign language to engage with information effectively, as concerning English, should be considered an additional standard to assess students' IL

level and explore the practice of teaching and learning IL in the country, as illustrated in Table 4 and Figure 7.

Table 4. The expanded AASL model

Beliefs	Standards	Strands
1. Reading is a window to the world 2. Inquiry provides a framework for learning 3. Ethical behaviour in the use of information must be taught 4. Technology skills are crucial for future employment needs 5. Equitable access is a key component for education 6. The definition of IL has become more complex as resources and technologies have changed 7. The continuing expansion of information demands that all individuals acquire the thinking skills that will enable them to learn on their own 8. Learning has a social context 9. School libraries are essential to the development of learning skills	1. Inquire, think critically and gain knowledge	1. Skills
	2. Draw conclusions, make informed decisions, apply knowledge to new situations and create new knowledge	2. Dispositions in action
	3. Share knowledge and participate ethically and productively as members of our democratic society	3. Responsibilities
	4. Pursue personal and aesthetic growth	4. Self-assessment strategies
10. Additional belief: language proficiency affects engaging with information	5. Use foreign language to engage with information effectively	

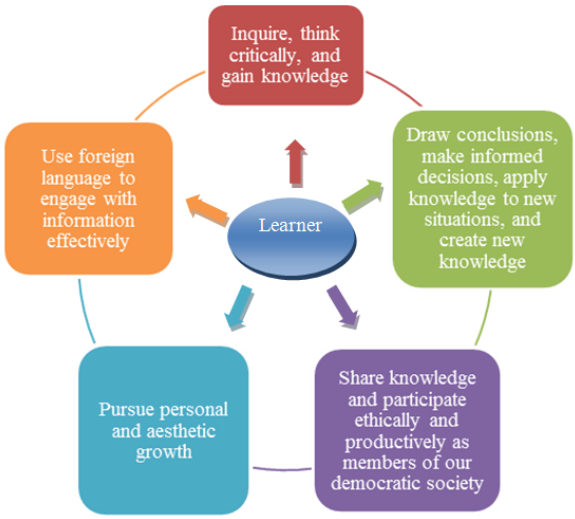


Figure 7. The expanded AASL model

3.5. Summary to Chapter Three

This chapter reviews the existing literature on IL, IB and teaching and learning theories. IL studies identify how an information literate individual appears, while IB research provides an insight into the information engagement process. Furthermore, the use of information is linked to learning activities through teaching and learning theories. It can be seen that constructivist and situated learning appear to be appropriate approaches in order to promote the development of IL.

This chapter introduces the expanded AASL model that indicates what an information literate student in Vietnam's school should be. It could be used to measure the IL level of students and investigate IL teaching and learning in the country's upper secondary schools.

CHAPTER FOUR: METHODOLOGY

4.1. Research philosophy

According to Kuhn (1970, p. 146), paradigms are considered "the entire constellation of beliefs, values, techniques, and so on shared by members of a given community." This research has employed a mixed-methods approach, within a pragmatic paradigm to achieve the goals of the research. Pragmatism is considered the underlying framework for mixed-methods research (Tashakkori & Teddlie, 2010; Creswell & Plano Clark, 2011). The focus of this approach is understanding the research problem, as Creswell and Plano Clark (2011, p. 41) state that "it is pluralistic and oriented toward what works and practice." Selecting data collection and analysis methods mainly aims to achieve an in-depth understanding of the problem rather than a single point of view or any alternative paradigm (N. Mackenzie & Knipe, 2006). One of advantages of this approach is that it allows researchers to employ more than one research strategy within the same study. This research adopted the pragmatic paradigm in order to provide a rich picture of IL teaching and learning in Vietnam's upper secondary schools through using different data collection techniques to gather data from different sources. This helps to propose an IL teaching model for upper secondary schools in the country.

4.2. Research strategy

This research employed a mixed-methods multiple case study approach, in which each participating school was conceptualised as a separate case and incorporating both quantitative and qualitative research methods. Taking Bryman's (2006) perspective on reasons for mixing methods, this research combines a quantitative measure of students' IL with a qualitative analysis to explore further their IL and teaching IL in the schools in order to identifying an appropriate IL teaching model for Vietnam's schools. Quantitative and qualitative research is mixed to triangulate findings in order to mutually collaborate and explain (Bryman, 2006). This allows the study to provide a more comprehensive picture of IL teaching and learning in Vietnam's schools than either quantitative or qualitative research alone (Creswell & Plano Clark, 2011).

Mixed-methods approach

Pickard (2013, p. 18) states that "mixed methods research is a combination of methodologies to address the same overarching research questions but can take many forms." Characteristics of a mixed-methods study are described in the works of J. Greene,

Caracelli, and Graham (1989), R. Johnson, Onwuegbuzie, and Turner (2007), and Creswell and Plano Clark (2011). The authors indicate that researchers, when designing a mixed-methods study, must ensure that their work involves both quantitative and qualitative methods that are used to collect quantitative data (e.g., numbers) and qualitative data (e.g., words), respectively. The above combination aims to provide an insight into the research issues.

This research employed a combination of qualitative and quantitative research strategies, with the use of a questionnaire, semi-structured interviews and document review. By employing several data collection techniques, the study has gathered information from multiple sources to corroborate research findings (Yin, 2014) and "to pick triangulation sources that have different biases, different strengths, so they can complement one another" (Huberman & Miles, 1994, p. 438). This triangulation process aims to gain assurance for the study (Stake, 2006). In this research, the primary data were derived from the answers the participants gave during the questionnaire process, from the responses the interviewees provided through the semi-structured interviews and via texts in a document review. The questionnaire which was used in this study was classified as a type of quantitative research using sampling and questionnaire data to measure characteristics of the population with statistical precision (Sukamolson, 2007). Document review and semi-structured interviews were used as a type of qualitative research.

By using mixed-methods research, this study can take full advantage of both qualitative and quantitative approaches and minimise their shortcomings (Spratt, Walker, & Robinson, 2004; Bryman, 2012). One of the noticeable benefits of employing a mixed-methods approach in this research is that it increases the comprehensiveness of overall findings by showing how qualitative data (semi-structured interviews, document review) provide explanations and corroboration for statistical data (questionnaire) (Bryman, 2006). This provides rich pictures of each case. Regarding quantitative research, Sukamolson (2007) points out that it allows researchers to collect data from a large sample and statistically compares between different groups. With respect to qualitative research, instead of choosing from fixed answers as quantitative methods do, qualitative approaches allow participants to respond in their own words. By encouraging participants to elaborate on their answers, qualitative methods offer a more profound understanding of the issues

through participants' original responses than quantitative methods which are statistically based on investigations (Mack, Woodsong, MacQueen, Guest, & Namely, 2005).

This study applies the explanatory sequential design introduced by Creswell and Plano Clark (2011) (Diagram 2). According to Creswell and Plano Clark (2011, p. 73), "explanatory design starts with quantitative data collection and analysis in phase 1 followed by qualitative data collection and analysis in phase 2, which build on phase 1." In this research, a quantitative study was conducted first and then followed up with a qualitative study. Particularly, students were surveyed using a self-completion questionnaire to measure their IL and their self-assessment of that ability. The questionnaire was then followed by semi-structured interviews with students nominated from the survey to obtain qualitative data in order to support in explaining and interpreting its results. The first quantitative phase helped to develop the second qualitative phase by identifying cases and developing interview protocols for the student interviews. The professional interviews and document review were then conducted to explain further the issues surrounding students' IL capability and IL teaching and learning activities in schools.

Stage	Procedure	Product
Literature review ↓	Review literature Vietnamese educational context	The expanded AASL model **Objective 1**
Case selection ↓	Purposive sampling	Schools (case study) Two schools: one public school and one private school
Quantitative data collection and analysis ↓	Multiple-choice questions Random sampling SPSS	Numeric data IL level IL awareness and self-rating **Objective 2**
Key informant selection Interview protocol development ↓	Purposive sampling: Select students who differed in their scores on significant predictors (high, average and low scores) so that reasons behind different results might be further examined.	Students nominated from the survey Interview protocol
Qualitative data collection and analysis ↓	Semi-structured student interviews Coding and thematic analysis	Text data (interview transcript) Codes and themes Students' IL capability Experiences in learning IL IL teaching activities Suggestions **Objective 2, 3 and 4**
Key informant selection Interview protocol development ↓	Purposive sampling: Select professionals in the schools	Administrators, teachers and librarians Interview protocol
Qualitative data collection and analysis ↓	Semi-structured interviews with administrators, teachers and librarians Document review Coding and thematic analysis	Text data (interview transcripts) Codes and themes Students' IL capability IL learning IL teaching activities Suggestions **Objective 2, 3 and 4**
Integration of the quantitative and qualitative results	Interpretation and explanation of the quantitative and qualitative results	Discussion and suggestions A new IL teaching model which can be adopted in Vietnam's upper secondary schools **Objective 4** Future research

Diagram 2. Research design diagram

A pilot study was conducted to test the questionnaire and the research process before executing the main study to ensure that they could capture the required data. The participants of the pilot and the main study were drawn from different cohorts.

Case studies

Case study is "an empirical inquiry that investigates a contemporary phenomenon (the "case") in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident" (Yin, 2014, p. 16). This research was a multi-case study/collective case study since it involved the participation of several of Vietnam's upper secondary schools to investigate IL teaching and learning in those institutions, in which each school was treated as a single case (Stake, 2006; Pickard, 2013). This could provide a more in-depth understanding of the development of students' IL in Vietnam's upper secondary schools.

The research brought the context of each case/school at both macro and micro environment level together based on Layder's (1993) approach (Figure 8). It is essential to investigate contexts, because they may have an effect on the case's activities (Stake, 2006). Each case/school exists in a macro-environment that includes Vietnam's educational context, economic conditions, cultural and social context, school library system, and digital access, both at schools and at home of students. Further details of the macro-environment can be found in the study context chapter (Chapter Two). Students nominated from the survey, librarians, teachers and administrators of each school were considered key informants who provided information related to students' IL development. They were called key informants as they "have a great deal of knowledge about the case as a whole and what goes on at a variety of levels within the case" (Pickard, 2013, p. 104). Also, the development of students' IL is situated in learning activities.

CONTEXT – MACRO ENVIRONMENT	Vietnam: - Cultural and social context - Economic conditions - Educational context - School library system - Digital access
SETTING	Intermediate social organisation – schools
SITUATED ACTIVITY	Learning
SELF	IL development - students, librarians, teachers, administrators

Figure 8. The context of each case at both macro and micro environment

4.2.1. Quantitative strategy

In the quantitative strategy, a questionnaire was utilised to assemble quantitative data. The questionnaire was mapped onto the following research objective.

(2) Assess the IL level of upper secondary students in Vietnam

There are several methods used to assess students' IL as indicated in the literature (Judith & Ada, 2007; Warmkessel, 2007; Walsh, 2009). In this study, IL assessment data were gained via a multiple-choice questionnaire that provides a set of fixed-choice questions for students to answer by using tick boxes with a range of set answers. One of the advantages of the questionnaire is allowing researchers to "gather data at a particular point in time with the intention of describing the nature of existing conditions" (L. Cohen, Manion, & Morrison, 2011, p. 256). Furthermore, there are many benefits of using fixed-choice questions to measure students' IL level, such as low cost, quick responses, convenience, being easy and quick to score, and generating numerical data and highly reliable data (Oakleaf, 2008; Bryman, 2012).

The questionnaire was divided into three sections, as follows:

Section A - About you: obtained demographic data of the study sample.

Section B – Awareness and self-rating: identified students' awareness of the IL concept and their IL level. Rosman et al. (2015a) argue that IL assessment should contain objective and subjective factors. Therefore, self-assessment items were included in the questionnaire to provide a more comprehensive assessment. A five-point rating scale was used to help students reflect their IL[22].

Section C – Your IL: used multiple-choice questions to find how "information literate" Vietnamese upper secondary students were in terms of the ability to develop search strategies, evaluate information sources, use information ethically and use English to engage with information effectively. Students were allocated one point for each correct answer and each question had only one correct answer. Although there are a number of existing standardised IL assessment tools, IL assessment of this study was based on the 12th grade version of the IL competency level assessment toolkit of high schools in the US, known as TRAILS (see Appendix 41 for further details), a project which was devised at Kent State University Libraries (Kent State University Libraries, 2016). TRAILS was chosen as it is designed based on AASL's Standards for the 21st Century Learner (AASL, 2007). TRAILS is mainly used in educational institutions within the US and it was used for the first time to measure non-American students in Chu's (2012) research. A short explanation of a situation needing an information search was provided in each question (e.g., you are reading a geography book and you want to find the passages on "Ha Noi". Which of the following parts of the book would you use to locate the passages?), and several different potential answer choices that could be used to solve the problem were then included (e.g. Bibliography, Index, Preface, Title Page). The questionnaire also provided the option "I do not know" for each IL testing question in order to avoid guessing the answer (Neely, 2006b; Sullivan, 2006).

Measurement of all IL aspects in a test is a very big challenge (C. Brown, 2002; Rosman et al., 2015a). It is suggested that the assessment should start with standards that are appropriate for the purpose of the study (Neely & Sullivan, 2006). Therefore, the questionnaire focused on four IL components: developing search strategies, evaluating information sources, using information ethically and using English to engage with

[22] The five-point rating scale is explained further in Section 4.6.1.1.1 and Section 4.7.1.1.

information effectively. IL test questions were mapped onto some performance indicators under two standards, “Inquire, think critically, and gain knowledge” and “Use language to engage with information effectively,” out of five IL standards of the expanded AASL model to measure students’ IL regarding the four IL components mentioned above. The details can be found in Table 5.

Table 5. Information literacy measure components

Standard	IL component	Indicator
Inquire, think critically, and gain knowledge	Develop search strategies	1.1.1: follow an inquiry-based process in seeking knowledge in curricular subjects, and make the real-world connection for using this process in own life
		1.1.4: find, evaluate and select appropriate sources to answer questions
		1.1.8: demonstrate mastery of technology tools for accessing information and pursuing inquiry
	Evaluate information sources	1.1.5: evaluate information found in selected sources on the basis of accuracy, validity, appropriateness for needs, importance, and social and cultural context
		1.1.7: make sense of information gathered from diverse sources by identifying misconceptions, main and supporting ideas, conflicting information and point of view or bias
	Use information ethically	1.3.1: respect copyright/intellectual property rights of creators and producers
		1.3.3: follow ethical and legal guidelines in gathering and using information
Use foreign language to engage with information effectively	Use English to engage with information effectively	1.1.4: find, evaluate and select appropriate sources to answer questions 1.1.5: evaluate information found in selected sources on the basis of accuracy, validity, appropriateness for needs, importance and social and cultural context 1.3.1: Respect copyright/intellectual property rights of creators and producers

Using existing questions, in this case using TRAILS, helps to increase reliability and validity of the measure tool, because it has been rigorously piloted (Gratch-Lindauer, 2003; Bryman, 2012). However, this study needed a modified version of TRAILS to make it more relevant to local students (Gratch-Lindauer, 2003; Sharun et al., 2014) and the purpose of the study. The questions were altered to suit Vietnamese upper secondary students. Modifications to the questions were based on suggestions made by a group of professionals, including an expert in Information Science, a high school librarian and an upper secondary school teacher.

- The expert is a person who had more than 30 years' experience in the field of Information Science in Vietnam. She can clearly understand the IL concept and the context of the study.
- The second person had around five years working experience in an upper secondary school as a librarian. She also has a great deal of experience in working in projects relating to school libraries. She brought not only her expert knowledge on a variety of information resources and information system in Vietnamese schools, but also skills related to searching, evaluating and using information.
- The teacher was working in an upper secondary school in Ho Chi Minh City (HCMC)[23]. She is well versed in teaching upper secondary students, understanding what is familiar with them and knowing what is expected from students in a study programme.

The questionnaires and the score schemes of both the pilot and the main study were sent to this group to seek their feedback before delivering to students. This process targeted to make sure that students were acquainted with the content of the questions and the questions were compatible with students' qualifications.

It is suggested that questionnaires should be short in order to obtain better response rate. However, identifying when a questionnaire becomes too long remains controversial (Bryman, 2012). There are no standards that provide indicators to specify what a long questionnaire is. Nevertheless, it was assumed that the questionnaire of the research was relatively long[24]. Thus, the questionnaire was divided into three parts and sent to students separately in order to reduce the risk of respondent fatigue (Bryman, 2012).

[23] Ho Chi Minh is the largest city in Vietnam. The educational quality of schools located in the city may be better than other areas.

[24] The length of the questionnaire is explained in details in Section 4.6.1.1.1 and Section 4.7.1.1.

In quantitative research, the measure has to be reliable and valid. There was a need to test the reliability and validity of the assessment tool. Reliability means the measure should ensure the consistency of measures, including stability, internal reliability and inter-observer consistency. Meanwhile, validity shows whether the concept is accurately measured by indicators that were generated beforehand. In other words, validity of the assessment tool ensures that the questions measure what the researcher intends to measure (J. Williams, 2000; Sonley et al., 2007; UNESCO, 2011a). Validity, in the context of this study, was concerned with the issue as to whether the questionnaire precisely reflected students' IL level.

Face validity was employed to establish validity of the questionnaire. Specifically, a group of professionals, as mentioned above, was established and invited to participate in the research. The questionnaire was sent to this group to seek their feedback before delivering to students. The researcher provided group members an explanation of the purpose of the study and the aim of the student survey. This aimed to help them have a common understanding of the purpose of the study and be aware of the importance of their expertise knowledge. In addition, the questionnaire was piloted with 17 upper secondary students. They were also invited to take part in a follow-up interview to obtain their comments about the questionnaire. Bryman (2012) indicates that a slight difference in understanding the indicator/concept of the participants could result in a very different estimate of the indicator/concepts on the part of respondents. The researcher, based on comments of students who took part in the pilot survey, added more concept explanation to reduce the variations in students' understanding of the concept. Furthermore, the questionnaire was amended to make it easier for students to complete. The research used Cronbach's α to measure reliability of the questionnaire.

The idea of using an online questionnaire emerged since the study was conducted at a distance. Evan and Mathur (2005) indicate that online questionnaires are becoming a major force in research, because they have many strengths, such as global reach, flexibility, speed and timeliness, technological innovations, convenience, ease of data entry and analysis, question diversity, low administration cost, ease of follow-up, controlled sampling, large sample easy to obtain, control of answer order, required completion of answers, go to capabilities, and knowledge of respondent vs. non respondent characteristics. However,

this study rejected this idea, as there was a concern that students might ask for advice from other people to complete the questionnaire. As a result, the research might fail in assessing students' actual IL skills. Furthermore, there was a concern that some students might have limited Internet access (UNESCO, 2013a). Therefore, the researcher decided to choose a paper-based questionnaire rather than a web-based questionnaire.

4.2.2. Qualitative strategy

4.2.2.1. Semi-structured interviews

The interview allows researchers to explore multiple realities (Stake, 1995). "It permits the respondent to move back and forth in time - to reconstruct the past, interpret the present, and predict the future, all without leaving a comfortable armchair" (Lincoln, 1985, p. 273). Therefore, it is one of the most commonly used methods in qualitative research (Bryman, 2012). According to Pickard (2013, p. 196), "interviews are usually used when we are seeking qualitative, descriptive, in-depth data that is specific to the individual and when the nature of the data is too complicated to be asked and answered easily." Students were nominated from the survey based on their IL test scores (low, average and high)[25] to participate in the follow-up semi-structured interviews. Librarians, teachers and administrators were then invited to take part in the semi-structured interviews in order to explore further issues that were raised from previous phases. The professional interviews were used to check findings generated through the student interviews and the questionnaire. This means the use of the professional interviews was considered a means of confirming findings initially produced by the use of other methods (Layder, 1993). The semi-structured interviews might clarify some issues that arose from the questionnaire, because semi-structured interviews allow participants to "talk about the meaning their social experiences have for them" (Layder, 1993, p. 116). By employing semi-structured interviews, the required qualitative data were collected without preventing the interviewees from bringing new ideas or viewpoints during the interview (Bryman, 2012). The interview questions were sent to the participants prior to the start of each interview to give them more time to prepare the answers. This was done to help the interviewees avoid forgetting and losing important information that might influence the study. The interviewees were also provided a summary of their answers for each question to ensure that the researcher understood what they meant and also offered a set time for them to self-

[25] Grouping students' IL test scores is explained in details in Chapter Four, Section 4.6.2.1 and Chapter Five, Section 5.2.2.

review their responses. An interview transcription report was then sent to the participants. This allows the data that were collected from the interviews to be verified by the participants themselves (Erlandson, 1993; Stake, 1995, 2006; Pickard, 2013). The interviews were recorded using "Voice Memos" software on a Smartphone to avoid missing significant statements (Patton, 2002). The interviews were then transcribed by the researcher.

The objectives of this research connected to the interviews are as follows.

(2) Assess the IL level of upper secondary students in Vietnam
(3) Identify the ways in which IL in-practice initiatives are framed for upper secondary students in Vietnam
(4) Suggest effective approaches to IL teaching to students in their senior year in high school in Vietnam

4.2.2.2. Document review

Document review is the use of existing materials (e.g., reports, policy statements, figures, library data, etc.) released by organisations/institutions with the aim of looking for supporting information for the research (Pickard, 2013). In the third phase, a document review schedule was created to collect qualitative data from reports (library and school), library statistics, documents in relation to IL initiatives of schools (if any) and teachers' resources. Issues surrounding developing search strategies, evaluating information sources, using information ethically and using English to engage with information effectively were explored.

This document review is associated with the following research objective.

(3) Identify the ways in which IL in-practice initiatives are framed for upper secondary students in Vietnam

Documents were collected from two sources: the public domain (e.g., school websites) and internal sources (e.g., staff).

4.3. Sampling

The total number of upper secondary schools in Vietnam was 2,767 with 2,439,919 students in 2015 (MOET, 2015c). Given that the research population was very large, it would be challenging to gather data from all upper secondary schools in Vietnam.

According to Lindauer et al. (2004), IL assessment requires large investments in terms of finance, human resources and time. However, this research was conducted with a very limited budget, which is considered a factor affecting the sample size (UNESCO, 2013a). Purposive sampling is usually used in case study research to obtain information-rich sources within the case (Stake, 2006; Pickard, 2013). For those reasons, three upper secondary schools (one for the pilot study and two for the main study) were purposively selected to examine the practice of IL teaching and learning in Vietnam's educational context based on their willingness and types of school.

The participants of the study comprised four groups of people from each institution, including school librarians who were used as key informants to invite students (aged 15-18), teachers and administrators in their schools to participate in the research.

In each school, the researcher randomly selected students in Grade 10, 11, and 12 to conduct data collection[26]. Students were invited to take part in the survey and they were then selected for the follow-up interviews based on their willingness and IL test scores.

4.4. Data analysis

According to Levine (1997, p. 1), "data analysis is a body of methods that help to describe facts, detect patterns, develop explanations, and test hypotheses." Adèr (2008, pp. 334-335) indicates that "data analysis is a process, within which several phases can be distinguished." Data analysis was employed in this research to describe a typical value and find differences among values with the aim of investigating the practice of IL teaching and learning in Vietnam's upper secondary schools.

4.4.1. Quantitative data analysis

After completing data collection, the response data were imported into SPSS 22 for analysis. The researcher pre-coded all questions and then transferred them into Excel before importing into SPSS for analysis. The software issued a default variable for each question. For all tests, the alpha level (p) was set at 0.05. Data were analysed on two levels: descriptive and inferential statistics. For the level of descriptive statistics, the research used frequency distribution, mean, sum, standard deviation and correlation

[26] The number of students who participated in the study is explained in more detail in Section 4.6.1.1.3 (pilot study) and Section 4.7.1.3 (main study).

coefficients. As for inferential statistics, several tests, such as independent sample t-test and Chi-square, were applied. This aimed to explore the relationship between variables.

4.4.2. Qualitative data analysis

By employing Nvivo, thematic analysis technique was used to analyse qualitative data. Qualitative data were assembled from the interviews (in the form of interview transcripts) and documents. As mentioned above (Section 4.2.2.1 and 4.2.2.2), the qualitative data collection was mapped onto the research objective 2, 3, and 4 to explore students' IL capability, IL teaching activities, and suggestions for an IL programme. Therefore, four main themes associated with the above research objectives, such as students' IL skills, factors affecting students' IL, teaching IL, and suggestions for an IL programme, were established prior to the coding process. This aimed to arrange and organise sub-themes more easily. The interview answers were then reviewed and categorised based on their content and the four main themes using four different colours. The answers corresponding to a specific main theme would be highlighted by a different colour. This helped the researcher save time in identifying main themes when revisiting/rechecking the transcripts. The categorisation of documents was not conducted because they were linked to only one main theme "teaching IL".

Sub-themes were then identified through the coding process, which entailed reviewing transcripts and documents, breaking down data into component parts and giving names to them (Bryman, 2012) (see Appendix 39 for a diagram of themes and sub-themes). Miles and Huberman (1984, p. 9) specify that "patterns and processes, commonalities and differences" will be recognised after classifying themes. The researcher analysed qualitative data by using the following process:

- Read through initial set of transcripts/documents without taking any notes
- Read through transcripts/documents again to identify uninteresting data
- Read through data again and make notes about important statements
- Conduct a line-by-line analysis of the interview transcripts/documents and create codes
- Review codes to identify the relationship between them
- Generate some ideas about data
- Translate from Vietnamese to English only those portions that are useful or relevant

The researcher translated data collection instruments (questionnaire, interview questions, document review schedule) from English to Vietnamese as well as the responses of the participants and document texts from Vietnamese to English (a sample of a translated interview can be found in Appendix 37). The translation process might result in information loss and concepts might be understood differently between languages (van Nes, Abma, Jonsson, & Deeg, 2010). The researcher as a translator made every effort to minimise this by following the process recommended by van Nes et al. (2010), which is conducting data analysis based on the original language (Vietnamese), using various English formulations to descript the meaning of the participants' responses and cooperating with a professional translator. The research also used "a double translation process" introduced by UNESCO (2013a, p. 87). Particularly, the researcher translated data collection instruments from English to Vietnamese. A professional translator then retranslated them from Vietnamese to English. The original English version of data collection instruments and the retranslated English ones were then compared to ensure the congruence of items across languages. Similarly, this process was applied to the data that were collected. Specifically, the data in Vietnamese were first translated into English by the researcher. They were then retranslated from English to Vietnamese by the professional translator. Two versions were then compared to identify differences across languages. The expert who was involved in modification of the questionnaire was also invited to take part in reviewing English and Vietnamese versions of data collection instruments and data.

4.5. Ethical considerations

According to Bogdan and Taylor, ethical issues perform an indispensable role in the research process since "ethical decisions necessarily involve one's personal morality" (Bogdan & Taylor, 1975, p. 29). For that reason, Northumbria University (2015) has developed a set of ethical guidelines that researchers need to follow in order to guarantee the rights and safety of the participants. The research was reviewed for ethical issues by the Research Ethics Committee of the Faculty of Engineering and Environment, as part of the University Research Ethics Committee (UREC), Northumbria University.

Ethical issues surrounding consent and confidentiality were firstly addressed. The researcher provided all important information of the study to the participants, such as research aim and objectives, methodology and participation process, in order to secure the

consent of the respondents. A letter and consent form were sent to the Board of School Management of the three schools to request permission to carry out the research in their institutions (see Appendix 4 for further details). Consent forms were given to four groups of participants in selected schools, including students, librarians, teachers and administrators, to seek their agreement to have a hand in the research. They were also requested to sign the consent form (see Appendix 6 for further details). Students' parents were also required to sign the consent form if they wished to give permission for their child to participate in this research. Information sheets (see Appendix 5 for further details) were provided to the participants to explain the objectives and relevance of the study and assure the respondents of anonymity. This information enabled the participants to understand how important their contributions were and what their participation involved. The participants were also informed that they could decline to participate and withdraw from the research, even during the process, without experiencing any disadvantage. If they decided to withdraw from the research, they had the option to 1) leave the research without removing their contribution or 2) leave the research and withdraw all their contributions. This means taking part in this research was totally voluntary. Participants' name and personal details would be kept strictly confidential, so that they could not be identified from what they said. No personally sensitive data were collected and stored. The responses that helped to reach the research objectives were collected only. The findings from this study will be made available to participants via their library soon after the completion of the thesis.

The information gathered from the interviewees was transformed into digital form and stored in password protected drives and folders. Data were stored securely and backed up on an external hard drive. This would be retained until the end of the research and publication of findings. Afterwards, the data would be safely and securely disposed of or deposited with the University of Northumbria, Newcastle upon Tyne.

Criminal record checks were conducted, because the research involved working with children who were under 18 years old. The researcher was asked to obtain Criminal Records Bureau (CRB) clearance before conducting the research. However, this was not applicable as the research took place in Vietnam. There is not an equivalent regime in the country. Therefore, letters of ethical approval from the researcher's employer - the Board of Presidents of the University of Social Sciences and Humanities – HCMC (see Appendix

2 for further details) and the Police Department (see Appendix 3 for further details) in her home country that oversee these issues in Vietnam were obtained to make sure that the research was carried out and the researcher was a suitable person for working with children. The researcher did not have criminal convictions and would not harm a child through her actions. The research did not mention the Data Protection Act (DPA) in the information sheet and consent forms that were given to participants. The reason for this was that DPA did not cover Vietnam at the time when data collection for this research took place[27]. Furthermore, Vietnam did not have a specific and specialised act in relation to information protection or information security. Therefore, the researcher explained participants' ethical rights when they took part in the research rather than using DPA as suggested.

4.6. Pilot study

This section will describe research strategies employed in the pilot study and the outstanding results of the pilot study. A more detailed explanation and discussion of the pilot study results can be found in H. Ngo and Walton (2016). This section will then identify changes that were made prior to the main study.

4.6.1. Pilot research strategies

4.6.1.1. Pilot quantitative research strategy

4.6.1.1.1. Questionnaire design

A question scheme (see Appendix 19 for further details) was established to develop the pilot questionnaire. The pilot questionnaire was then created using closed questions, involving a choice of tick boxes with no written responses required (see Appendix 7 and 8 for further details). Some significant findings from the pilot questionnaire will be presented in Section 4.6.2.

The pilot questionnaire consisted of 35 questions and was divided into three sections, as below:

[27] Some companies and organisations in Vietnam use DPA in practice, but it is not formally applied across the country. The reason for this is Vietnam does not have a specific and specialised act in relation to information protection or information security. It is scattered in different areas, such as civil law, IT law, etc. The Ministry of Information and Communications issued a draft of information security/protection law and submitted it to the Parliament in October 2015. It came into force in 2016 after the data for this research had been gathered.

Section A - About you: included five questions (questions 1-5) that obtained demographic data of students, such as name, gender, age, school and level of study.

Section B – Awareness and self-rating: consisted of seven questions (questions 6-11 and 35) that aimed to identify students' awareness of the IL concept and their IL level. Students self-rated their IL using two five-point rating scales: choose 5 for highest rating and 1 for lowest rating, and select one out of five options, including very good, good, neither good nor poor, poor and very poor.

Section C – Your IL: a set of 23 multiple choice questions (questions 12-34) was used to investigate students' IL level in terms of developing search strategies, evaluating information sources, using information ethically and using English to engage with information effectively.

A score scheme (see Appendix 20 for further details) was also created in order to help the researcher calculate the test score.

4.6.1.1.2. Procedure and technique

An upper secondary school (labelled School A) was selected to take part in the pilot research based on the convenience and their willingness. The pilot questionnaire was conducted at a distance and so the researcher did not directly send the questionnaire to students. It was sent to the librarian who was working for School A. The librarian was used as a key informant to invite 17 students to participate in the pilot study.

The pilot questionnaire was divided into three parts. Students received each part of the pilot questionnaire on three different days in the third week of December 2014. Each part of the pilot questionnaire was completed within 5 to 15 minutes and sent back to the librarian. This means students did not need to complete all 35 questions at one time.

The researcher created a list of eight short interview questions (see Appendix 21 and 22 for further details). Students were then invited to take part in a follow-up interview with the aim of seeking their feedback about the pilot questionnaire.

4.6.1.1.3. Participants

The pilot study involved students (n=17) from a private upper secondary school in Vietnam (for a full explanation of this term, see Chapter Two, Section 2.2.2). Students were aged from 15 to 18. In terms of level of study, more than half (52.9%) completed the pilot questionnaire as Grade 12 students, while Grade 10 and Grade 11 took part in the study with the proportion of 17.6% and 29.4%, respectively.

4.6.1.1.4. Data analysis

Analysing the pilot questionnaire data followed the data analysis process explained in Section 4.4.1. Students' names were coded using two capital letters "AS" and a number from 1 to 17, for example, AS1, AS2, etc., to remain anonymous.

4.6.1.2. Pilot qualitative research strategy

Pilot qualitative research strategy included semi-structured student interviews, document review and semi-structured professional interviews (teacher, librarian and administrator). The pilot interviews were conducted to help the researcher improve interview skills and gain some experience in dealing with participants (Bryman, 2012). The pilot interviews would inform recommendations for the main study.

4.6.1.2.1. Student interviews

- **Interview questions design**

The student interview consisted of seven open questions (see Appendix 11 and 12 for further details). The results of the interviews were partly used to explain the findings of the questionnaire with the aim of enhancing the validity of the overall study.

- **Procedure and technique**

Case selection for the interviews was based on students' IL test scores and their willingness. Each interviewee was also asked via email to select a time of their choice to conduct a telephone or Skype interview in Vietnamese based on their availability. Although telephone or Skype interviews are uncommon in qualitative research (Bryman, 2012), the pilot interviews had to be conducted by telephone and Skype because of a limited budget and distance. Each interview took approximately 30-40 minutes.

- **Participants**

The pilot interviews involved three students who had different IL test scores. In particular, students who were coded AS1, AS4 and AS14 got lowest score (39), average score (61) and highest score (87), respectively.

4.6.1.2.2. Professional interviews

- **Interview questions design**

A semi-structured interview was conducted with professionals (teacher, librarian and administrator) to collect qualitative data. The interview entailed 11, 12 and 13 open-ended questions for librarian, administrator and teacher, correspondingly (see Appendix 13 – 18 for further details).

- **Procedure and technique**

Professionals were invited to participate in the research based on their willingness. The professional interview procedure was performed similar to the student interview process. The professional interviews were carried out through telephone or Skype. Each interview took approximately 30-40 minutes.

- **Participants**

Three professionals, including a librarian, a teacher and an administrator, were willing to participate in the research.

4.6.1.2.3. Document review

The document review involved various documents, such as reports (school and library), library statistics and teachers' resources (study guidelines, study programme, lesson plan). A schedule was created prior to document collection (see Appendix 9 and 10 for further details). The librarian was contacted to provide documents explained in the schedule.

4.6.2. Pilot research findings

This section presents the significant findings of the pilot study and changes made prior to the main study.

4.6.2.1. Pilot questionnaire findings

4.6.2.1.1. What did not need to change?

- **Questionnaire design**

The pilot questionnaire obtained many detailed and valuable answers from students; this allowed the researcher to assess students' IL level in terms of developing search strategies, evaluating information sources, using information ethically and using English to engage with information effectively. The IL scores also enabled the researcher to choose significant cases for the second phase. The salient findings of the pilot questionnaire are as follows.

- *IT test scores*

The raw scores were transformed into percentages, because the number of questions used to test the four IL components was not equal. The three groups of percentage scores, including less than or equal to 30% (≤ 30), more than 30% and less than 70%, and more than or equal to 70% (≥70) were then recoded into values, such as low, average and high, correspondingly. The IL scores of the pilot sample ranged from 39 to 87 out of a maximum score of 100, with a mean score at 59.41/100. It was found that approximately 70.6% of the students achieved average scores (> 30 and < 70) and more than one-fourth (29.4%) of them reached high scores (≥ 70).

It was found that, out of the four IL testing areas, the best scored aspect was using English to engage with information effectively (mean score: 69.53). Meanwhile, the least scored was evaluating information sources (mean score: 37.12). The performing mean scores of the ability to develop search strategies and use information ethically were 61.18 and 55.88, respectively. The results indicate that students were good at searching for information, but weak at evaluating information sources.

As for the items belonging to the four IL testing areas, the best-performing areas were using search fields to find information and understanding the concept of plagiarism (mean score: 100) (Table 6). This is contrary to the performing scores of evaluating appropriate information sources (mean score: 0). Furthermore, students obtained low scores at some items which mainly fell into evaluating information sources. It can be seen that students performed better in the earlier stages of the process of engagement with information.

Table 6. Scores for individual items of the pilot questionnaire

Testing area	Item	Score (%)
Developing search strategies	Boolean operators	38
	Book index	41
	Book table of contents	53
	Broadening search results	53
	Truncation	65
	Call numbers	65
	Narrowing search results	71
	Online public access catalog (OPAC)	82
	Search fields	100
Evaluating information sources	Appropriate information sources	0
	Authoritative information sources	18
	Information content evaluation	88
Using information ethically	Ethical guidelines/instructions	18
	Copyright	59
	Plagiarism	100
Using English to engage with information effectively	Identifying important information from text files and documents written in English	35
	Understanding the meaning of the English book's title	65
	Evaluating the content of information written in English	71
	Understanding the meaning of a citation written in English	77
	Understanding the message in relation to ethical issues written in English	77
	Identifying appropriate search fields presented in English	94

- *Self-rating of IL level*

Students were asked to rate their IL level in terms of being or not being information literate, developing search strategies, evaluating information sources, using information ethically and using English to engage with information effectively. Of the 17 students who

completed the questionnaire, 76.5% rated their IL at a high level. Meanwhile, 17.6% ranked their IL at an average level and 5.9% thought their IL level was weak. There were 35.3% of the students who had IL scores that matched their self-rating. The findings show that students self-rated their IL level higher than their actual IL level. In other words, students thought positively of their IL level.

- *Comparison of IL levels between female and male students*

Female students were found to score higher than male students (mean score: 67.00 vs. 52.67). By employing independent sample t-test, a statistical significant difference in overall IL scores between girls and boys was explored ($t = -2.468$, $df = 15$, $p = 0.026$).

- *Correlation of hearing/reading about IL and IL scores*

The results indicate that, out of the 17 students, the proportion of the sample hearing or reading about the term was 17.7% in comparison with 82.3% of those who had not heard or read about the term. Furthermore, the result of Chi-square test showed that there was no relationship between hearing/reading about IL and IL scores ($X^2 = 8.972^a$, $df = 8$, $p = 0.345$). In other words, hearing/reading about IL did not affect students' IL scores.

- *IL scores between grades*

Based on the mean scores between three groups of students, it can be seen that Grade 12 students had a better performance than Grade 10 and Grade 11 students. Specifically, Grade 12 scored 71.33, while Grade 11 and Grade 10 scored 58.44 and 54, respectively. It seems students who were at higher academic level were also better in IL.

- *Correlation of IL scores and self-rating*

By employing Spearman Correlation Coefficient, a linear relationship between IL scores and self-rating was explored, with $r > 0$. However, this relationship was weak ($r < 0.1$).

- **Questionnaire design and layout**

The questionnaire was designed to be easy for students to complete. All of the students gave a great deal of positive feedback about the questionnaire design and layout, some representative examples of positive responses were as below:

I could understand the meaning of the questions and the layout of the questionnaire was good. (AS1)

I think the questionnaire layout is easy to follow. (AS5)

I think it is easy to answer and follow the questions. (AS7)

It can be seen that students agreed that the questionnaire was well designed. They could easily answer the questions. There was no negative feedback about the questionnaire layout and no revisions required. Hence, the main study would re-use the structure and layout of the pilot questionnaire.

- **Questionnaire length**

There was a concern that the questionnaire was relatively long; therefore, it was split into three parts and sent to students separately. It was found that this solution was very helpful in reducing the risk of fatigue. Students gave positive comments related to this issue, for example:

It is a little bit longer than other questionnaires. However, dividing the questionnaire into three parts was a good idea, because this made me feel more comfortable when completing the questions. (AS1)

Some questions were long, but this was acceptable because they helped me understand the content of the questions. Some questions were long because of definitions, explanations and examples. However, I do not think I could have understood clearly the questions without them. (AS6)

I prefer to divide the questionnaire into three sections like this. If I had to answer all questions at one time, it would daze me. (AS7)

Students' answers demonstrated that dividing the questionnaire into smaller parts was effective. They felt more comfortable and less likely to experience tiredness when doing the questionnaire. For that reason, the questionnaire for the main study would be delivered to students in the same manner.

❖ **Questionnaire content**

There was a concern that students might not understand the questions. This might affect the results of the test. The responses from the follow-up interviews pointed out that students could understand all questions, for example:

> *I fully understood the questions.* (AS1)

> *There were some questions to which I did not know the right answers, but I still understood what you meant.* (AS5)

> *The questionnaire was not difficult. It was normal.* (AS9)

It can be seen that, under recommendations of the professional group, the questions suited students. They could fully understand the content of the questions. They might or might not know the right answers, but they understood what the questions meant. As a result, the main study would use the same questions to assess students' IL.

4.6.2.1.2. What needed to change?

The pilot questionnaire results and follow-up interviews identified some issues that needed to be amended in the questionnaire and the way that it would be delivered.

❖ **Controlled conditions**

Students completed the pilot questionnaire under the observation of the librarian. They were required to provide answers honestly and fully. They were also asked not to discuss the answers with their friends and teachers until they completed the questionnaire. It was found that students were aware of the importance of completing the questionnaire independently, for example:

> *I completed the questionnaire on my own without any help. I think this will help you obtain accurate information.* (AS1)

Students selected the option "I do not know" when they did not know the correct answer rather than seeking help from other people. It can be assumed that students completed the

pilot questionnaire honestly. However, not all 17 students completed the pilot questionnaire at the same time because of the difference in their timetable. This resulted in a concern that students might discuss the answers with their peers who also took part in the pilot questionnaire. It was recommended that the main study should be conducted in controlled conditions. This means students would be provided a set time to complete the questionnaire and the test would be conducted under the control of the researcher and class teachers.

- **Changes to the questionnaire**

Some changes were made based on the pilot questionnaire results, as follows.

First of all, the rating scales of the questionnaire which were used in self-assessment items were amended. Although students did not give any negative feedback concerning the rating scales, the researcher was confused when importing data into SPSS for analysis. The pilot questionnaire used two different rating scales for questions 7-11 and 35, as below:

- Choose 5 for highest rating and 1 for lowest rating (questions 7 and 35)
- Select one out of five options: very good, good, neither good nor poor, poor and very poor (questions 8-11)

It was suggested that the response set should be unified to avoid misunderstanding, for example, 1 for highest level and 5 for lowest level in comparison with 1 for lowest level and 5 for highest level (Bryman, 2012). Therefore, the main questionnaire would use only one rating scale, which was "choose 5 for highest rating and 1 for lowest rating."

Some changes were made regarding academic terms in the questionnaire. The questionnaire was sent to the professional group to review and evaluate before delivering it to students. However, there still remained a concern that the questionnaire might include advanced academic terms. Students' comments concerning the use of terms in the questionnaire are presented below:

> *I am familiar with the terms used in the questionnaire, except IL.* (AS1)

> *I am familiar with the terms used in the questionnaire, because I was taught these terms when I did projects in the school. However, I had not heard about the term IL before doing this questionnaire.* (AS2)

I am familiar with the terms used in the questionnaire, except the term Boolean and some words, such as AND, OR and NOT. They muddle me. (AS3)

I think there are several advanced terms used in the questionnaire, for example, Boolean operator, to me at least. This is the first time I have heard about the term IL. As for other terms, I am familiar with them. (AS5)

I think the terms used in the questionnaire are normal. I understand the term IL after reading your explanation. You also should provide an explanation for the terms, such as database and catalogue. I can understand, because I often use them, but I am not sure about other people. (AS7)

It can be seen that students were familiar with almost all terms that were used in the questionnaire. However, some were still too new to students, for example, IL, search engine operator and Boolean operator. According to Neely and Ferguson (2006), misunderstanding terms results in bias, because students cannot answer questions correctly. It was suggested that an explanation should be added into the question related to Boolean operator (question 19[28]) in order to provide students an understanding of the concept. Furthermore, in the pilot questionnaire, Boolean operator questions (questions 19 and 20) were ordered behind the questions related to narrowing and widening search results (questions 16[29] and 17[30]). These questions (questions 16 and 17) required students to have some knowledge related to search engine operators. It was suggested that, in the main questionnaire, Boolean operator questions should be reordered and then followed by questions related to narrowing and widening search results.

It was assumed that IL is a complicated concept. Asking students to rate themselves in terms of being or not being information literate might cause many challenges to students. It was suggested that question number 7 should be removed. Furthermore, the order of self-assessment items and IL test questions should be reordered. Self-assessment items would follow IL test questions. According to Rosman et al. (2015a), self-assessment questions are

[28] Question 10 of the main questionnaire
[29] Question 13 of the main questionnaire
[30] Question 14 of the main questionnaire

needed in the questionnaire, but they should be put at the end of the questionnaire after participants have completed the test. Self-assessment items[31] were relocated at the end of the questionnaire, as suggested, in order to provide students a better understanding of the new concepts, such as developing search strategies, evaluating information sources, using information ethically and using English to engage with information effectively.

It was found that students used different methods to calculate their age. This stems from the difference between Western and Asian people regarding age calculation. Europeans use the solar calendar, while Asians often utilise the lunar calendar. Some students used the Western calendar and some used the lunar calendar. For instance, two students were born in the same year, in 2000, but one thought his age was 15 years old in 2015, while the other believed his age was 16 years old in 2015. As a result, the data did not make sense. The target students of the study were aged from 15 to 18. It was recommended that question number 4, "What is your age?", should be removed. Question 5[32], "What is your level of study?", was used to identify students' age and year of study.

It was found that approximately 59% of the students chose the first answer, "English grammar in use", to question 29[33] rather than the second option, "English grammar in use: a self-study reference and practice book for intermediate learners in English", which is the correct answer. The first option provides the main title, while the second answer offers the full title, including the main title and subtitle. Although students did not give any feedback regarding this question, it was assumed that the above question did not show clearly which title students needed to identify. This might result in a misunderstanding among students. It was recommended that the word "FULL" should be inserted into the question to help students understand clearly, as below:

*The following image is from the first page of a book, which is the book's **FULL** title?*

It was found that three out of the 17 students showed that they had heard or read about IL. However, the pilot questionnaire did not allow the researcher to explore what the term IL meant to them. It was recommended that the questionnaire should provide a supplementary

[31] Question number 8, 9, 10 and 11 of the pilot questionnaire
[32] Question 4 of the main questionnaire
[33] Question 25 of the main questionnaire

question, "If Yes, what does IL mean to you?", under question number 6[34] to explore further students' perception of the concept.

Some questions were long, because they provided explanations/examples. It was recommended that the main questionnaire should use different colours or text font to distinguish the main question content with explanations/examples, as suggested by one of the students:

> *I think it will be better if you use different colours or something like this to distinguish the main question with definitions or examples or explanations.* (AS1)

Therefore, in the main questionnaire, the researcher used normal text font for the main question content and italic text font for explanations/examples.

For question 22[35], a large number of students selected the option "Internet search engine such as Google" rather than "print encyclopaedia" to search for information related to a country. It could be that online is more attractive than print, regardless. Similarly, Hsieh et al. (2013), in their long-term research, found that the web search engine was used by more students than an encyclopaedia. They made a change in their questionnaire by replacing the potential response choice "an encyclopaedia" by "online encyclopaedias." It was suggested that the potential response choices for question 22 should be revised in the main questionnaire. The option "print and online encyclopaedias" was included in the list of potential answers for question 22.

It was found that students were more familiar with online search engines, especially Google, than others. It was suggested that the main study should include some questions concerning online search systems to explore further students' IL. As a result, two questions were added to the main questionnaire, as below.

[34] Question 5 of the main questionnaire
[35] Question 16 of the main questionnaire

What **DON'T** you use to evaluate the update of a web page?

- Web page update date
- The amount of information that a web page provides
- Last day when a notice is posted
- Links are working effectively or not
- I do not know

What **DON'T** you use to evaluate the authority of a web page?

- Qualifications of authors
- Prestige of sponsor
- Web domain (e.g. .org, .edu, .net, .com)
- The amount of information that a web page provides
- I do not know

4.6.2.2. Qualitative research findings

4.6.2.2.1. Semi-structured interviews

- **What did not need to change?**

The interview questions gained many valuable responses from students and professionals in terms of students' IL capability, learning and teaching IL and suggestions for an IL programme in the school.

It was found that there were no formal IL programmes in the school. However, some individual instructions that were provided by teachers when students conducted projects might help them develop IL. According to the interviewees, there were three main reasons that resulted in a lack of IL initiatives in the school, as presented below.

- The concept of IL not matching known models, even amongst those who are educators
- The weakness of Vietnamese's perception of IL
- The lack of opportunities to use IL because of the transmission approach in teaching and an overloaded study programme enforced by the MOET

The findings indicated that there was no difference between students in their awareness of the role of IL in academic success. They believed that IL was important to students. However, they thought that the role of IL might be diverse in different schools and

subjects. This means that, although students had high IL awareness, their IL achievement was not as high as their awareness. Although students had the same viewpoint on the role of IL, the difference between students in their experiences in learning IL outside of the school and awareness of opportunities to develop IL in school might result in different IL scores.

- **What needs to change?**

It was found that the concept of IL was new to the interviewees (students and professionals). They asked the researcher to explain the meaning of IL. It was recommended that the interviewees in the main study should be provided with an explanation and examples of the IL concept prior to each interview to remind them of the meaning of the term. However, there was a concern that this might affect the results of the professional interviews. In the professional interview question list, the first two questions examined their awareness and perception of the IL concept. Providing an explanation of the IL concept prior to the interviews might have an impact on their perception of IL. Their answers to the question "what does IL mean?" might resemble the IL explanation that the researcher came up with in the question list. It was suggested that professional interviews should be divided into two occasions to avoid providing inaccurate information concerning IL perception. The professionals would answer the first two questions the first time without an explanation of the IL concept. The explanation would be provided prior to the second interview.

The pilot study found that the interviewees faced many challenges in answering the question, "Introduce the expanded AASL model and then ask interviewees: how might the model help you to develop your IL?" They gave similar responses and no depth of information. This demonstrates that they had no awareness of the model, for example:

> *I think the standards are very basic and helpful, but it may take time to implement the model.* (AS1)

The IL test in phase one mainly focused on four skills, developing search strategies, evaluating information sources, using information ethically and using English to engage with information effectively. Asking the participants how to develop themselves and

students by using the model might not suitable. It was recommended that the above question should be removed from the list.

The pilot interviews were conducted using telephone and Skype. The interviewees were sometime interrupted by other people and activities. Furthermore, the quality of the transmission line may result in loss of data (Novick, 2008). It was suggested that the main study should conduct face-to-face interviews rather than telephone or online interviews.

4.6.2.2.2. Document review

- **What did not need to change?**

Teaching IL in the school was fully explored through data that were obtained from documents. It was found that the school did not have formal IL programmes, although developing students to be lifelong learners was integrated in the mission of the school. The project-based learning approach had been promoted in the school. However, requiring students to follow a project-based learning accompanied with completing a study programme enforced by the MOET might cause students to be overloaded.

It can be seen that documents at institution level (school and library reports, library statistics and teachers' resources) partly reflected the practice of teaching IL in the school. It was suggested that the main study would use these documents to explore teaching IL in schools.

- **What needs to change?**

Documents at institution level demonstrated that developing lifelong learners and the project-based learning was integrated in the educational goals of the school. However, the implementation of formal IL instructions was neglected. This caused a curiosity to the researcher. It was speculated whether the above problem primarily resulted from the educational policies and viewpoints of the school, or was affected by educational policies implemented by higher management levels. It was suggested that the main study should examine documents at national level, such as educational projects and policies enforced by the MOET in recent years. Important educational policies which were issued by the MOET would be used to explore IL teaching in schools. Specifically, the Educational Development Strategy for the period 2011-2020 and Guidance on the Implementation of Secondary Education Tasks in the Academic Year 2014-2015 should be used to explore IL

teaching activities in the country's schools. The two above documents are considered guidance for schools in teaching and learning. This aimed to provide a more comprehensive understanding of the implementation of IL initiatives in the country's schools.

It was found that teachers and students mainly used textbooks published by the MOET for their teaching and learning. Textbooks are divided into two levels: basic and advanced. This data source might be helpful in examining the practice of teaching and learning IL in Vietnamese upper secondary schools. However, they were not reviewed in the pilot study. It was recommended that textbooks for teachers and students (Table 7) should be reviewed in the main study. Due to limitations of time, budget and people, two textbooks from each category at basic level would be selected to review and analyse.

Table 7. Textbooks for teachers and students

Basic level		
Grade	**Number of books**	**Sample**
Student textbooks		
Grade 10	14	2
Grade 11	14	2
Grade 12	14	2
Teacher textbooks		
Grade 10	14	2
Grade 11	14	2
Grade 12	14	2
Advanced level		
Student textbooks		
Grade 10	14	0
Grade 11	14	0
Grade 12	14	0
Teacher textbooks		
Grade 10	14	0
Grade 11	14	0
Grade 12	14	0

4.7. Main study

This section clarifies in detail how quantitative and qualitative research strategies were implemented in the main study.

The main study focused on two of Vietnam's upper secondary schools, in which each school was considered a single case. Macro and micro environment were examined and described, as below (Figure 9).

<table>
<tr><td>CONTEXT – MACRO ENVIRONMENT</td><td colspan="2">Vietnam:
- Cultural and social context
- Economic conditions
- Educational context
- School library system
- Digital access</td></tr>
<tr><td rowspan="2">SETTING</td><td colspan="2">Intermediate social organisation</td></tr>
<tr><td>Case 1 – School B</td><td>Case 2 – School C</td></tr>
<tr><td>SITUATED ACTIVITY</td><td>Learning</td><td>Learning</td></tr>
<tr><td>SELF</td><td>IL development - students, librarians, teachers, administrators</td><td>IL development - students, librarians, teachers, administrators</td></tr>
</table>

Figure 9. The context of two schools at both macro and micro environment

4.7.1. Questionnaire survey

4.7.1.1. Questionnaire design

The question scheme was amended based on suggestions of the pilot study. A new question scheme (see Appendix 35 for further details) was used to develop the questionnaire. The questionnaire was designed to be easy for students to complete, with the use of closed-ended questions, involving a choice of tick boxes with limited written responses required (see Appendix 23 and 24 for further details). The questionnaire was designed with limited open-ended questions, because students may not be interested in

writing a lot (Bryman, 2012). There was one open-ended question involved in the questionnaire that aimed to explore students' perception of the IL concept. A score scheme (see Appendix 36 for further details) was developed to calculate students' IL test scores. The data from the returned questionnaires were collected and analysed and the results can be found in the findings chapter (Chapter Five).

The questionnaire contained 35 questions and was split into three sections, as follows:

Section A - About you: included four questions (questions 1-4) that obtained demographic data of the study sample, such as name, gender, school and level of study.

Section B – Your IL: a set of 25 multiple choice questions (questions 6-30) was used to investigate students' IL level in terms of the ability to develop search strategies, evaluate information sources, use information ethically and use English to engage with information effectively.

Section C – Awareness and self-rating: consisted of six questions (questions 5 and 31-35) with the aim of identifying students' awareness of the IL concept and their IL self-assessment. Students self-rated their IL using a five-point rating scale: choose 5 for highest rating and 1 for lowest rating. Based on the results of the pilot study and works conducted by M. Gross and Latham (2007) and Rosman et al. (2015a), the self-assessment items were put at the end of the questionnaire. This aimed to shed some light on the IL concept and testing areas. This would increase the accuracy of the test. In other words, this could enhance self-assessment validity.

Cronbach's α reliability coefficient of SPSS was used to measure reliability of test items. Research indicates that good tests have reliability coefficients ranging from a low of 0.65 to above 0.90 (T. Liu & Sun, 2012). Cronbach's α was conducted with the following results:

- IL assessment: 0.65
- IL self-assessment: 0.71

It can be seen that the internal consistency reliability coefficient of the scale was at an acceptable level (see Appendix 38, Section 16 for further details). In other words, the scale had good internal consistency reliability.

4.7.1.2. Procedure and technique

Following suggestions from the pilot study, the questionnaire was completed in controlled conditions in order to avoid non-response or issues related to the quality of replied questionnaires (e.g. missing data). According to Bryman (2012), lack of administration and encouragement may lead to a problem that the questionnaires are not fully answered. The researcher handed out the questionnaires to students in their class and collected them after students had completed. The investigator and class teachers were facilitators who supported students during the questionnaire completion process.

The questionnaire was broken down into three parts and sent to students separately. Thus, the questionnaire was completed over three days. Each part was completed within 5 to 15 minutes each day before students' official classes.

4.7.1.3. Participants

Two upper secondary schools, located in HCMC in Southeast region, were invited to participate in the study as a representative sample. It is assumed that two schools, in comparison with more than 2,000 schools of the population, is a small number. This might result in possible sampling error (Bryman, 2012). It is argued that "a large sample cannot guarantee precision" (Bryman, 2012, p. 198). Therefore, the number of two schools involved in the research was accepted. The researcher could not include more in the study sample because there were some issues confronting the research, such as lack of funding, resources and time, as mentioned above (Section 4.3). However, the good response rate and high level of cooperation from the schools were considered good features.

Since the research focused on the practice of IL teaching and learning in Vietnamese upper secondary schools, it was important to demonstrate the practice of IL by exploring different settings. The practice of IL would be different in each setting. In Vietnam, there are two main kinds of upper secondary schools, public and non-public, as described in the context of the study chapter. Thus, the researcher stratified the population by school type, and then one public and one non-public school were selected (labelled as School B and School C, respectively). This was also based on their willingness to participate in the research. The sampling of students for the questionnaire was then implemented by drawing

on nominated schools. In this research, there were two levels of sampling – that of contexts (that is, the schools) and then of participants (that is, of students and professionals).

The selection of two schools followed the process, as explained below.

- The researcher obtained a list of upper secondary schools in HCMC from the Education and Training Department – HCMC, which contains 196 institutions. This list was grouped into two units, public and non-public schools, by the department.
- The researcher contacted in person each two schools individually to seek the permission from the vice-presidents instead of all schools at the same time. Each round included one public school and one non-public school.
- At the second round, one public school and one non-public school provided the researcher permission to conduct the study in their institutions.

This process was employed to decide which schools would be invited to take part in the research. The above method was used, because there could be no bias as to which schools would be surveyed and also maintained the representative nature of the research. The school setting is described below.

School B

School B is a public upper secondary school situated in HCMC, Vietnam. The school was established in 1992. In 2003, the school became one of the first national standard schools in HCMC. At the time of this research, the school had 1,146 students, 40 classrooms (in which 16 were equipped with one television and one computer per classroom), three experiment rooms, one lab room, three computer rooms (48 computer workstations per room with full Internet access) and two audio-visual rooms.

School B's library was rebuilt and moved to a new location in 2011. The material repository was reclassified. However, at the time of this study, classifying the material repository had not been completed. Thus, the library did not have a fully structured catalogue to assist students and teachers in finding materials. At the time of this study, the

library had five computers available to access to the Internet and 11,683 books. It received financial support of around 30 million VND per year[36] for all activities.

Before 2014, the library provided access to both electronic and print materials, in which electronic materials were accessed through the library software, VEMIS[37]. In 2014, the library faced budget cuts, electronic source access was therefore abrogated. As a result, library computers were mainly used for the purpose of Internet access and entertainment rather than accessing library resources. This resulted in no access to an OPAC as previously.

The library had four librarians, of which only one had a professional qualification for school librarian. Three out of four were teachers who could not do teaching.

School C

School C is a private upper secondary school located in HCMC, Vietnam. The school was established in 2006. The school has two branches located in two different districts in the city. At the time of this research, the school had 981 students, 40 classrooms (all of them were equipped with computers, air-conditioners and televisions), six computer rooms (30 computer workstations per room with full Internet access), four lab rooms, two multimedia rooms and four experiment rooms.

The school had two dormitory areas for students that were fully equipped with air-conditioners and computers. The school also built artificial grass courts, fitness rooms, multipurpose sport hall, etc., for students.

School C's library had two branch libraries. The total number of books in School C's libraries was 2,312. Before 2015, School C's library allowed students to access electronic sources and provided an inter-library loan service through the library software, Lac Viet. However, in 2015, the library stopped using the software due to budget cuts. This led to no access to an OPAC as previously.

[36] 30 million VND is equivalent to £1,000.
[37] VEMIS is a school management software. It is the result of the SREM project that started in April 2006 and is implemented to support the education reform.

School C's library had two librarians, one of whom had a professional qualification for school librarian. However, this person also played a role as a head teacher. The other librarian was a teacher who could not do teaching.

In each school, a simple random sample was applied to select students to participate in the study. According to Bryman (2012), a simple random sample ensures that taking part in the research between different groups of the population is equivalent. Each school had more than 30 classes with around 1,000 students at all levels. This means there were around 30 students in each class. The researcher decided on choosing students based on Yamane's (1967) sample formula. Selecting classes depended on the decision of the vice-presidents. They randomly chose one class at each level. Finally, 183 students in six classes at level 10, 11 and 12 in the two schools were selected to take part in the study.

The number of students taking part in the study was calculated using Yamane's (1967) simplified formula for proportions, as follows.

$$n = \frac{N}{1 + Ne^2}$$

Specifically:

n - the sample size

N - the population size

e - the acceptable sampling error

School B and School C had 1,146 (N_1) and 981 (N_2) students, respectively. Yamane's formula was applied to the above sample with sampling error of 10% (e = 0.1). As a result, the main study involved 183 upper secondary students (n=183) from the two schools.

$$n = n_1 + n_2 = \frac{1146}{1 + 1146*(0.1)^2} + \frac{981}{1 + 981*(0.1)^2} = 92 + 91 = 183$$

4.7.1.4. Data analysis

Analysing the main questionnaire data followed the data analysis process explained in Section 4.4.1. The questionnaire was conducted in controlled conditions. Furthermore, the survey team, including class teachers and the researcher, made an attempt to explain the importance of the questionnaire to students in class. Therefore, all students fully answered

the questionnaires, so there was, in fact, no missing data for all variables. This could be considered one of the positive features of the research.

4.7.2. Student interviews

4.7.2.1. Interview questions design

The interviews were undertaken to seek the students' responses regarding their IL capability and experiences in IL learning and teaching. Furthermore, the interviews aimed to obtain suggestions for an IL programme by asking a series of open-ended questions. The interview consisted of six open-ended questions (see Appendix 25 and 26 for further details).

4.7.2.2. Procedure and technique

Student interviews of the main study followed the process explained in Section 4.2.2.1. The researcher selected cases based on students' IL test scores (high, average and low scores) and their willingness. The researcher then invited three students from each school and two students from each group to take part in the follow-up interviews based on their willingness. Each interviewee was contacted via telephone to select a time of their choice to conduct face-to-face interviews in Vietnamese based on their availability. Each interview took approximately 30-40 minutes.

4.7.2.3. Participants

Six students from the two schools participated in the follow-up interviews in the main study. Student coded BS74 (scored 84), BS55 (scored 56), BS10 (scored 28), CS51 (scored 72), CS91 (scored 56) and CS28 (scored 20) took part in the research.

4.7.3. Professional interviews

4.7.3.1. Interview questions design

The interviews purposed to understand students' IL capability, explore what and how IL instructions were delivered and obtain suggestions for an IL programme by asking a series of open-ended questions. Specifically, administrators, teacher and librarian interviews included 16, 17 and 17 question, respectively (see Appendix 27 – 32 for further details).

4.7.3.2. Procedure and technique

Professional interview procedure and technique were similar to the student interviews, as explained in Section 4.2.2.1. The professionals were invited to participate in the research based on their willingness. Each professional interview took approximately 30-40 minutes. However, based on suggestions from the pilot study, there was a difference between student interviews and professional interviews in that the professionals needed to take part in the interview twice. The first three questions aimed to explore the professionals' awareness of the IL concept. Therefore, the researcher divided the interviews into two to prevent the influence of the IL explanation on the professionals' perception of the IL concept. On the first occasion, the researcher sent the professionals the first three questions (numbers 1-3) and then conducted follow-up interviews based on those questions. The remaining questions, including an explanation of the IL concept, were delivered to them in the second interview.

4.8.3.3. Participants

Ten professionals, including two librarians, six teachers and two administrators from the two schools, were willing to participate in the research. The professionals were coded to retain their anonymity, as follows (Table 8).

Table 8. Professional coding

Order number	Position	Code
School B		
01	Teacher - English	BT1
02	Teacher - Literature	BT2
03	Teacher – Computer Science	BT3
04	Vice-rector	BM
05	Librarian	BL
School C		
06	Teacher - Literature	CT1
07	Teacher – Computer Science	CT2
08	Teacher - English	CT3
09	Vice-rector	CM
10	Librarian	CL

4.7.4. Document review

The review involved various documents at two levels: national and institutional level. For the national level, the Educational Development Strategy for the period 2010-2020 and the Guidance on the Implementation of Secondary Education Tasks in the Academic Year 2014-2015, which were issued by the MOET, were selected to analyse. As for the institutional level, the research chose documents, such as school and library reports, library statistics, teachers' resources and textbooks (see Appendix 33 and 34 for further details). Documents were collected in two domains: public (e.g. MOET website, school websites) and private (schools, teachers and librarians).

4.7.5. Data analysis

Cross-analysis was conducted to explore similarities and differences between School A and B along with separate case study analysis.

CHAPTER FIVE: FINDINGS OF THE RESEARCH

5.1. Introduction

The data analysis results are presented in this chapter. The study consists of three phases of data collection, namely, questionnaire (phase 1), student interviews (phase 2), and professional interviews and document review (phase 3), as presented in the methodology chapter. This chapter commences with the statistical analysis results of the questionnaire. Further details of the SPSS analysis techniques and results can be found in Appendix 38. The analysis results of the student interviews in phase 2 and the professional interviews in phase 3 will follow. The chapter then concludes with the analysis results of documents that belong to the third phase. The qualitative data themes can be found in the map that is presented in Appendix 39.

5.2. Information literacy assessment

5.2.1. Students' demographic data

A set of four questions was used to collect demographic data from the study sample. Table 9, Table 10 and Table 11 present the demographic data of the research (see Appendix 38, Section 1 for further details). As illustrated in Table 9, the study involved 183 upper secondary students of whom 99 (54.1%) were female, while 84 (45.9%) were male. Among 183 students took part in the study, 92 were from School B and 91 were from School C (Table 10). In terms of study level, Grade 12, 11 and 10 students participated in the study with the percentage of 35.5%, 30.1% and 34.4%, respectively (Table 11).

Table 9. Participants' gender

		N_B	N_C	N	Percentage (%)
Valid	Female	57	42	99	54.1
	Male	35	49	84	45.9
	Total	92	91	183	100.0

Table 10. Schools' participants

		N	Percentage (%)
Valid	School B	92	50.3
	School C	91	49.7
	Total	183	100.0

Table 11. Participants' level of study

		N_B	N_C	N	Percentage (%)
Valid	10	31	32	63	34.4
	11	27	28	55	30.1
	12	34	31	65	35.5
	Total	92	91	183	100.0

5.2.2. Information literacy test scores

The number of items used to test each IL component was not equal. Thus, the percentage scores that were translated from the numeral scores were used to compare among the items and testing areas. The percentage scores were divided into three groups, including less than or equal to 30% (≤ 30%), more than 30% and less than 70% (30 < score < 70), and more than or equal to 70% (≥ 70%). They were then recoded into values, such as low, average and high, correspondingly.

5.2.2.1. Overall information literacy scores

As shown in Figure 10, the students' overall IL test scores ranged from 12 to 84 out of a maximum score of 100 (mean score[38]: 46.43/100). It was found that 82% of the students achieved average scores[39], while 13.7% of them reached low scores, and only 4.4% of them had high score performance (see Appendix 38, Section 2 for further details). The results indicate that a large number of students had basic knowledge and skills to engage with information. They knew how to interact with information. However, their IL skills had not been developed comprehensively.

[38] By mean score, this thesis means the score which is equal to the sum of all IL test scores in the data set divided by the total number of students.

[39] By average scores, this thesis means a group of percentage scores that range from more than 30% and less than 70%.

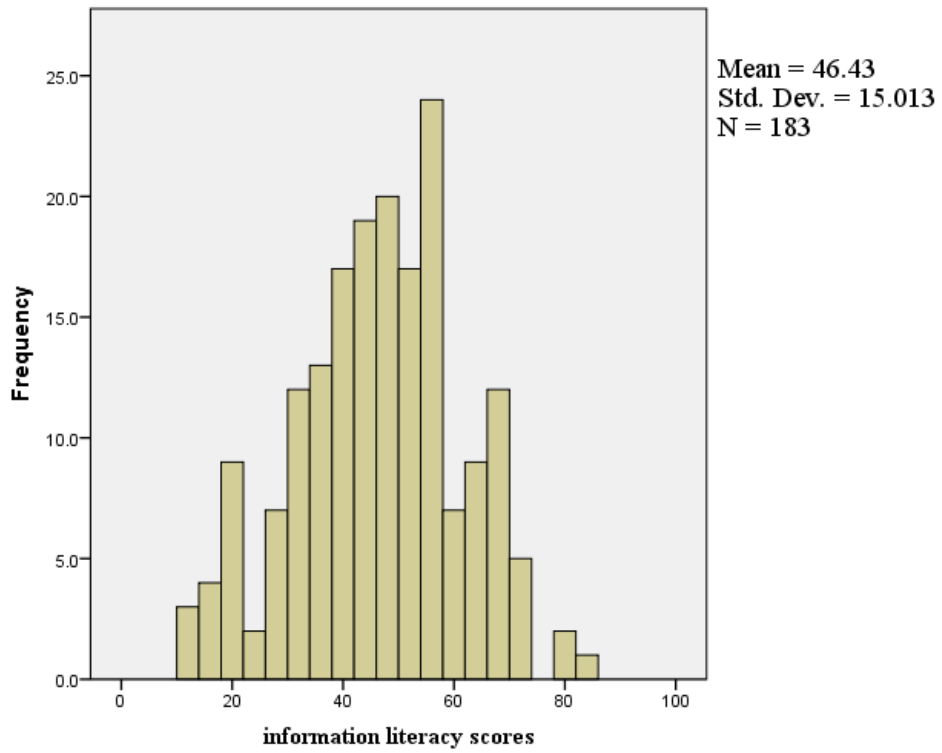


Figure 10. Overall information literacy scores

5.2.2.2. Information literacy scores between schools

The IL scores of two schools are presented in Figure 11. Generally, average IL scores were recorded by a large number of students in both schools; in particular, 88.04% for School B and 75.82% for School C. There was a difference in the percentage of students who had high and low scores in the two schools. The proportion of the students achieving high scores in School B was 6.52%. This ratio was higher than School C, with 2.2%. Conversely, the number of students of School C obtaining low scores was higher than School B (21.98% vs. 5.43%). School B students' overall IL test scores were also higher than School C (mean score: 52.61 vs. 40.18) (see Appendix 38, Section 3 for further details). Overall, it can be said that students of School B had better IL performance than School C. It is not surprising to find that School B's students – a public school, did better than their peers from School C – a private school. The reason is that, as discussed in Vietnam's educational context chapter (Section 2.2.2, Page 17), public schools are selective and often enrol students who have better academic performance than those in private schools. This may indicate that school students who achieve better academic results likely display a better IL level.

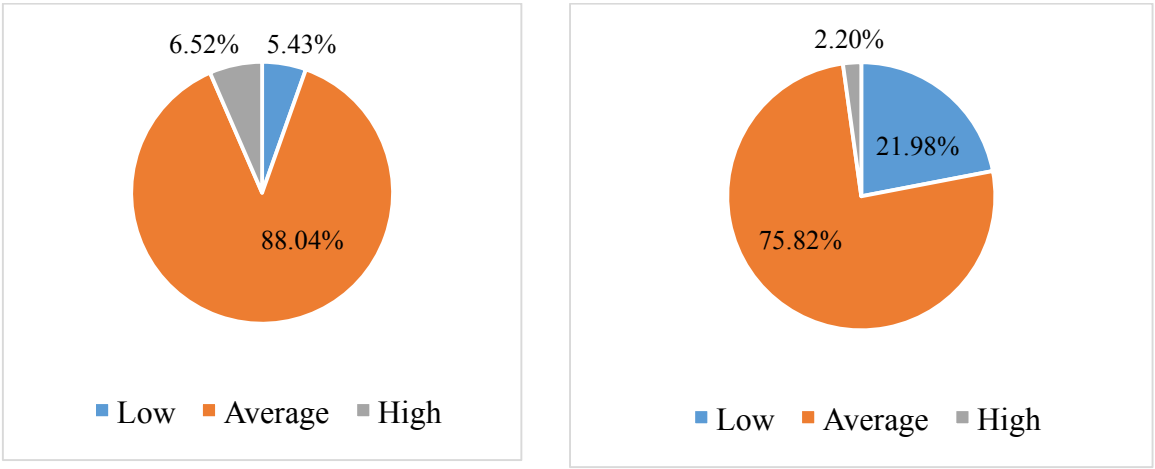


Figure 11. Overall information literacy scores of the two schools

Employing a Chi-square test, a relationship was found between types of school and IL scores. In other words, types of school made a difference in IL scores of students, with p = 0.003, df = 2 and $X^2 = 11.955^a$ (see Appendix 38, Section 3 for further details). It should be noted that the study sample is small, so the Chi-square test results are only significant for these case studies.

5.2.2.3. Information literacy component testing scores

The percentage scores for each aspect of IL are provided in Table 12. The findings reveal that, out of the four IL testing areas, the best-scored aspect was using information ethically (mean score: 60.11). Meanwhile, the least-scored side was evaluating information sources (mean score: 38.36). The performing mean scores of the ability to develop search strategies and use English to engage with information effectively were 43.28 and 49.40, correspondingly (see Appendix 38, Section 4 for further details). The results show that students were better in using and finding information than evaluating sources.

Table 12. Scores for four information literacy testing areas

Testing areas	$Mean_B$ (%)	$Mean_C$ (%)	Mean (%)	Minimum	Maximum
Evaluating information sources	45.87	30.77	38.36	0	100
Developing search strategies	50.65	35.82	43.28	0	100
Using English to engage with information effectively	52.96	45.80	49.40	0	100
Using information ethically	65.49	54.67	60.11	0	100

Table 13 presents the percentage scores of the four IL testing areas of the two schools. It can be seen that, students of School B had better performance in four IL testing areas than School C's students, especially information source evaluation. High and average scores in the four IL testing areas were obtained by more of School B's students than School C's students.

Table 13. Scores for four information literacy testing areas of the two schools

Testing areas	School B			School C		
	Low (%)	Average (%)	High (%)	Low (%)	Average (%)	High (%)
Developing search strategies	12	63	25	26.4	68.1	5.5
Evaluating information sources	18.5	68.5	13	45.1	54.9	0
Using information ethically	5.4	40.2	54.3	23.1	37.4	39.6
Using English to engage with information effectively	15.2	69.6	15.2	25.3	59.3	15.4

The percentage scores among the individual items are given in Table 14. The headings relate to the four IL testing areas explained above. It can be seen that the best-performing area was an understanding of the concept of plagiarism, with the mean score at 88. This is

contrary to the performing scores of evaluating appropriate information sources, with the mean score at 11.5. In addition, students obtained poor-performing scores in some other items, such as Boolean operators and book index (score ≤ 30). Using search fields to find information and evaluating information content showed good-performing scores (scores > 70). The remaining items were accomplished with average scores (30 < score < 70).

It was demonstrated that students were familiar with online search engines, especially Google, in comparison with other search tools, for example, library catalogue. Particularly, 72.1% of the students chose the third answer, “Internet search engine, such as Google”, rather than “encyclopaedia” for the question “You have a plan to study abroad. You are searching for information about a country – the United Kingdom. Given the sources below, select the best place to begin your search.”

Table 14. Scores for individual items

Testing area	Testing item	Score (%)
Developing search strategies	Boolean operators	**20.8**
	Book index	**24**
	Broadening search results	32.8
	Truncation	35.5
	OPAC	41.5
	Narrowing search results	47.5
	Book table of contents	62.3
	Call number	67.8
	Search fields	**79.2**
Evaluating information sources	Appropriate information sources	**11.5**
	Authoritative information sources	44.8
	Information content evaluation	**77.6**
Using information ethically	Following ethical/legal instructions	36.1
	Copyright	57.4
	Plagiarism	**88**
Using English to engage with information effectively	Identifying important information from text files and documents written in English	37.2
	Identifying appropriate search fields presented in English	40.4
	Understanding the meaning of a citation written in English	48.6
	Understanding the message in relation to ethical issues written in English	54.6
	Understanding the meaning of the English book's title	56.8
	Evaluating the content of information written in English	58.5

5.2.2.4. Information literacy scores between grades

Students were divided into three groups, including Grade 10, 11 and 12. Based on the mean scores between three groups of students, it can be seen that Grade 12 students had better IL performance than Grade 10 and 11 students (Table 15). Specifically, Grade 12 obtained 50.58, while Grade 11 and 10 scored 43.13 and 45.02, respectively. It was expected that older students would achieve better IL performance. In this study, the results were contrary to expectations. Generally, Grade 12 students had higher scores in overall IL

scores and IL testing aspects than the two other grades. Surprisingly, although Grade 11 students are at a higher academic level, they had lower scores in overall IL and IL testing aspects than Grade 10 students. Also, the most surprising result was that higher scores in evaluating information sources were achieved by Grade 10 students (see Appendix 39, Section 6 for further details).

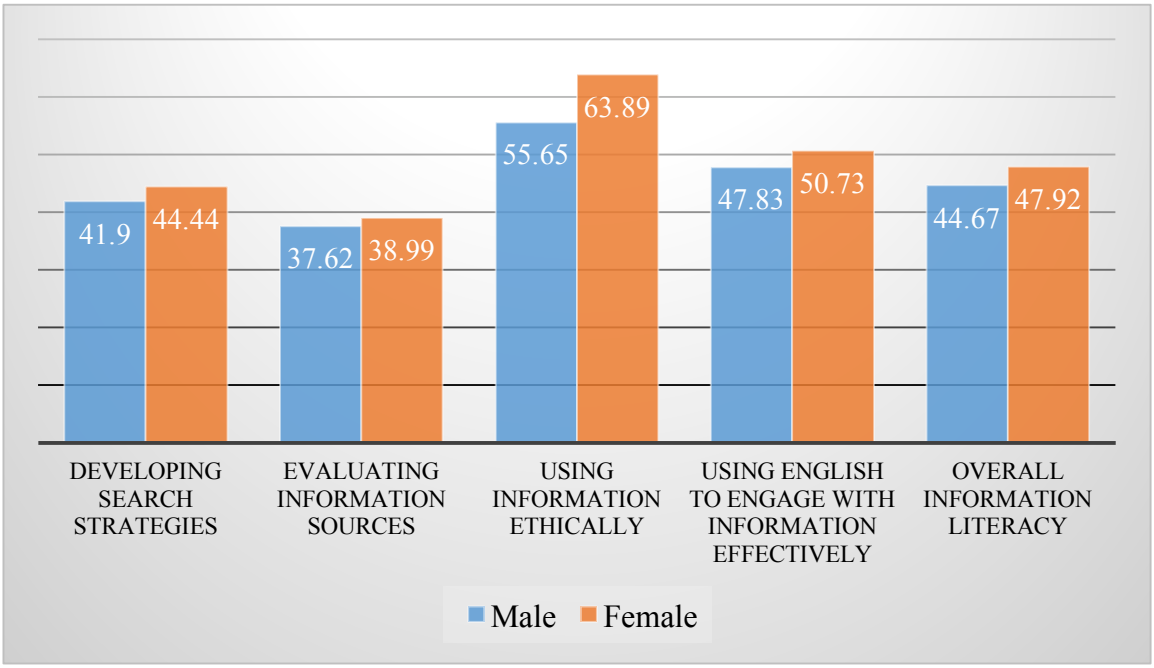
Table 15. Information literacy scores between grades

Testing areas	Grade 10 (%)	Grade 11 (%)	Grade 12 (%)
Developing search strategies	41.59	38.18	49.23
Evaluating information sources	41.59	32.36	40.31
Using information ethically	54.37	62.73	63.46
Using English to engage with information effectively	47.43	47.29	53.09
Overall IL scores	45.02	43.13	50.58

Chi-square test was conducted to explore the relationship between IL scores and grades. The test was conducted under the null hypothesis that there was no relationship between level of study and students' IL scores. The finding provides evidence that there was a relationship between the two above variables. In other words, overall IL scores were affected by level of study, with $X^2 = 12.911^a$, df = 4 and p = 0.012. However, there was no relationship between IL components and study level ($p>0.05$) (see Appendix 38, Section 5 for further details).

5.2.2.5. Comparison of information literacy levels between female and male students

Students were categorised into two groups, males and females, and their IL scores were then compared. From the data in Figure 12, it is apparent that female students scored slightly higher than male students (mean score: 47.92 vs. 44.67). In the same way, data analysis of other aspects of IL between males and females indicates that females obtained higher scores than males in the four IL testing areas. Specifically, females and males' scores in developing search strategies, evaluating information sources, using information ethically and using English to engage with information were 44.44 vs. 41.9, 38.99 vs. 37.62, 63.89 vs. 55.65, and 50.73 vs. 47.83, correspondingly (see Appendix 38, Section 6 for further details).



(p=0.404) *(p=0.660)* *(p=0.015)* *(p=0.433)* *(p=0.145)*

Figure 12. Comparison of information literacy levels between female and male students

The difference between males and females regarding their IL test scores was examined using independent sample t-test. The null hypothesis for the test was that the mean score of females was equal to the mean score of males. The resulting *p*-value of Levene's test was 0.225. This means the variances in the sample was equal and the computed test statistic was p = 0.145, t = 1.465 and df = 181. In this case, the null hypothesis was accepted, which means that the mean scores of the two groups were equal. In other words, it can be assumed that there was no statistical significant difference in mean IL scores between girls and boys, with $p>0.05$ and a confidence interval of 95%. At the same time, independent sample t-test was utilised to investigate the difference between two groups of students concerning their IL component scores. Similarly, there was no statistical significant difference between female and male students regarding the mean scores of individual IL components ($p>0.05$), except using information ethically ($p<0.05$) (see Appendix 38, Section 6 for further details).

5.2.2.6. Information literacy self-assessment

Students were asked to rate their IL level after completing the test based on what they did in the assessment. Students were required to rate themselves using a scale (5 for highest rating and 1 for lowest rating). This scale, specifically 1 to 2, 3, and 4 to 5 were then recoded into values, such as low, average and high level, respectively. Of the 183 students who completed the questionnaire, 26.78% rated their IL level at a high level. Meanwhile, 52.46% ranked their IL level at an average level and 20.77% thought their IL level was low (Figure 13). It can be said that a large number of participants thought positively of their IL level. This raised the question as to whether their self-assessment was directly proportional to their IL test results. The correlation between the two variables, including self-rating and IL test scores, was examined and the result will be presented in Section 5.2.2.13.

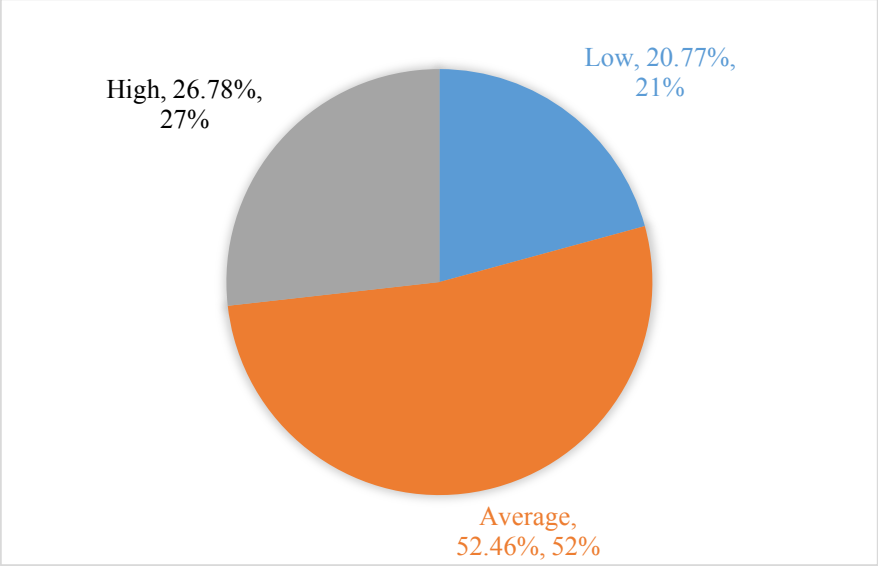


Figure 13. Self-assessment of information literacy level

Similarly, Students were also required to self-rate their IL in terms of developing search strategies to find information, evaluating information sources, using information ethically and using English to engage with information ethically. In general, it was found that students rated their ability at an average and high level for almost all IL components, except using English to engage with information effectively (Figure 14). Specifically, 35% and 26.8% of the students rated their information search skill and information evaluation skill at a high level, respectively. In particular, the ethical use of information was rated at a high level by more students than other aspects (51.4%). Nevertheless, many students

thought that they were not good at using English to engage with information (43.7%) (see Appendix 38, Section 7 for further details).

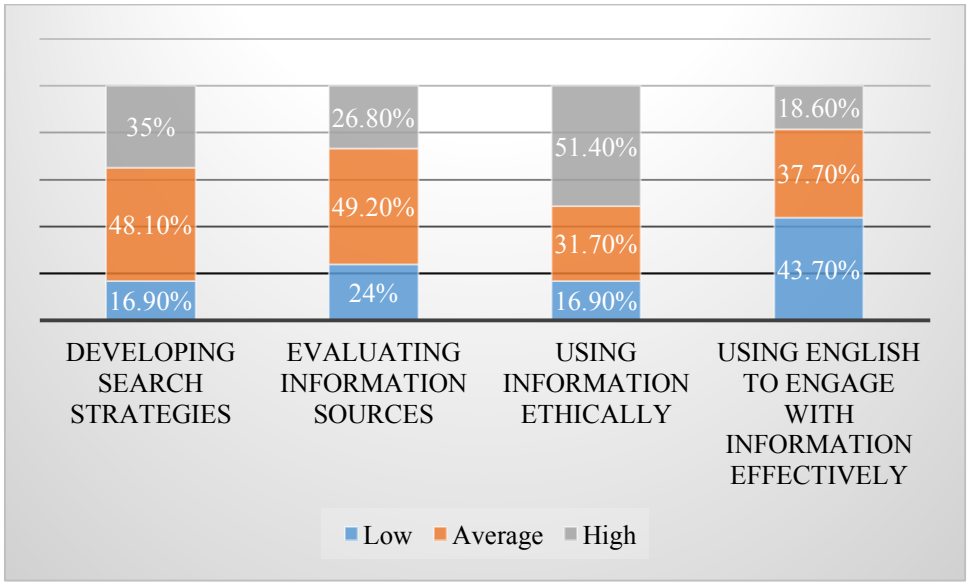


Figure 14. Self-assessment of four information literacy testing areas

5.2.2.7. Comparison of information literacy self-rating between female and male students

It seems boys are inclined to think more positively of their IL level than girls. Specifically, 29.76% of the male students, as against 24.24% of the female students, rated their IL at a high level (Figure 15).

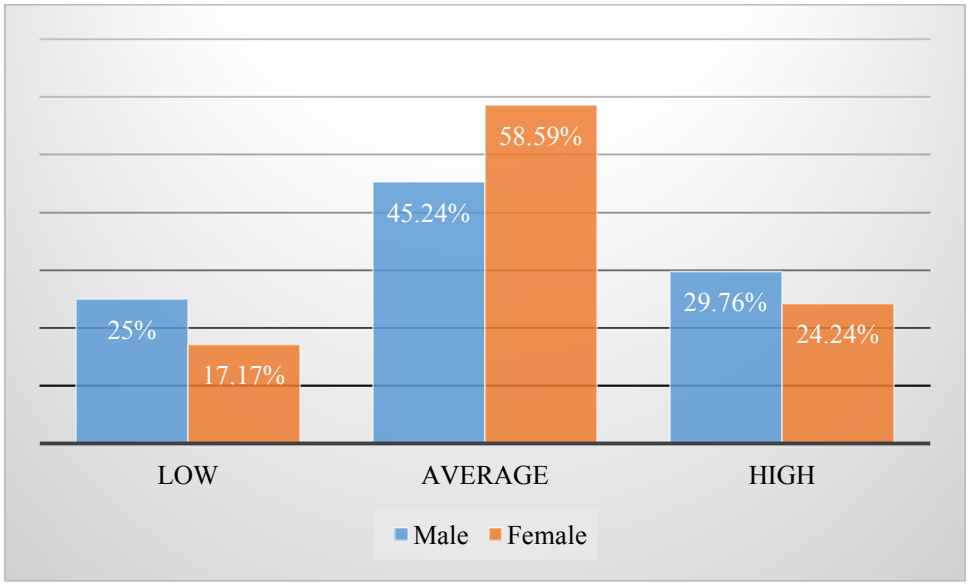


Figure 15. Comparison of information literacy self-rating between female and male students

Independent sample t-test was also employed to examine the difference between males and females regarding their IL self-rating (see Appendix 38, Section 8 for further details). The result indicates that there was no statistical significant difference in IL self-rating between boys and girls ($t = 0.299$, $df = 152.446$, $p = 0.766$).

5.2.2.8. Comparison of information literacy self-rating between grades

It was found that students who were at a higher academic level self-rated their IL more positively than those who were at lower grades. From the data, it can be seen that Grade 12 students assessed their IL level higher than other grades (Figure 16). In particular, the proportion of students who rated their IL at a high level increased from 14.29% (Grade 10) to 33.85% (Grade 12). Conversely, the fraction of students who ranked their IL at a low level declined from 33.33% (Grade 10) to 10.77% (Grade 12).

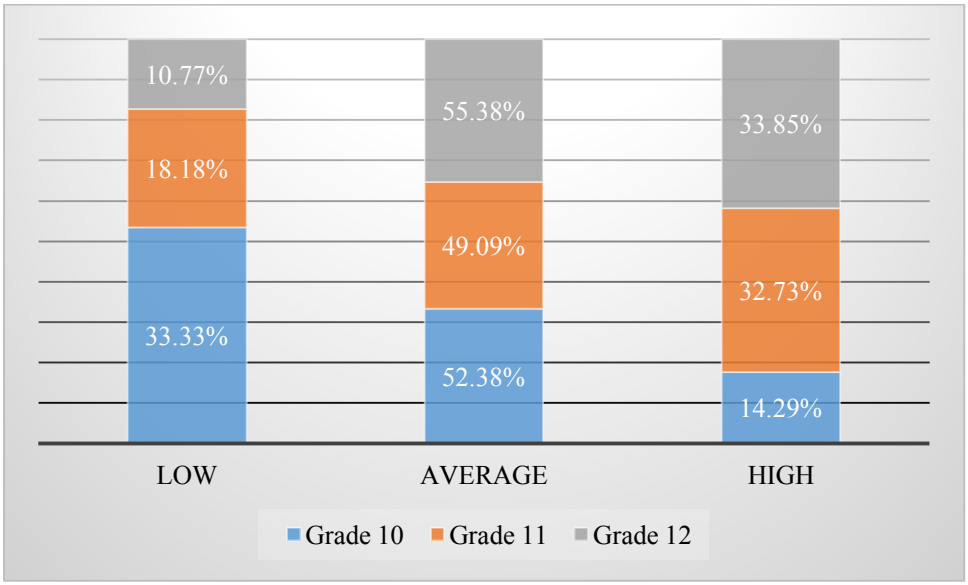
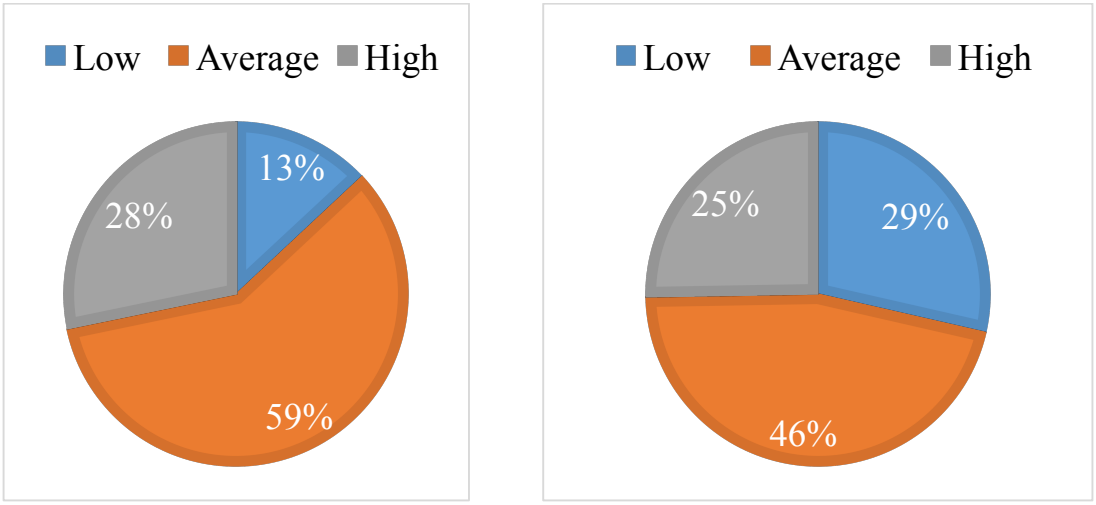


Figure 16. Comparison of information literacy self-rating between grades

Chi-square test was conducted to explore the relationship between IL self-assessment and grades. The test was conducted under the null hypothesis that there was no relationship between level of study and IL self-assessment. However, it was found that IL self-assessment was affected by level of study, with $p<0.05$ ($X^2 = 13.934^a$, df = 4, p = 0.008) (see Appendix 38, Section 9 for further details).

5.2.2.9. Comparison of information literacy self-rating between schools

It was found that students of School B self-rated their IL level higher than School C's students (Figure 17). 28% of School B's students self-rated their IL at a high level. This rate was higher than School C (25%). This result may reveal that students with better academic performance think of their IL level in a more positive way.



School B School C

Figure 17. Information literacy self-assessment between schools

Chi-square test was employed to explore whether there was a relationship between type of school and self-assessment. It was found that self-belief of students in their IL was also affected by schools, with $p<0.05$ ($X^2 = 6.836^a$, df = 2, p = 0.033) (see Appendix 38, Section 10 for further details).

5.2.2.10. Correlation between demographic variables and information literacy testing areas variables

As explained in previous sections, Chi-square test was used to examine the relationship between demographic and IL testing scores variables. In this section, Pearson Correlation Coefficient was employed to explore further the relationship or correlations between the above variables. According to J. Cohen (1988), the statistical value 'r' indicates the strength of the correlation between variables, as follows:

- Small: r = 0.10 - 0.29
- Medium: r = 0.30 - 0.49
- Large: r = 0.50 - 1.00

It was found that there were some correlations between demographic (school, gender and study level) and IL testing scores variables (Table 16). Correlation significant at the 0.01 and 0.05 level is presented by "**" and "*", correspondingly (see Appendix 38, Section 11 for further details). It can be assumed that there was a medium negative linear relationship between school and IL scores ($r < 0$). Level of study also affected students' IL regarding developing search strategies, using information ethically and overall IL scores. It can be

said that students who were at a higher academic level also had more positive IL scores (r > 0). However, it roughly appears that there was only a weak correlation between study level and IL scores (r<0.29). Nevertheless, there was no correlation between students' gender and their IL scores.

Table 16. Correlation between demographic data and information literacy level

Testing areas	School	Gender	Level of study
Developing search strategies	**-.364****	-.062	**.158***
Evaluating information sources	**-.361****	-.033	-.024
Using information ethically	**-.236****	**-.179***	**.165***
Using English to engage with information effectively	-.144	-.058	.096
Overall IL scores	**-.415****	-.108	**.157***

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

5.2.2.11. Correlation between demographic variables and self-rating variables

Pearson Correlation Coefficient was also utilised to explore correlations between demographic data and IL self-assessment. The study found that there were some correlations between demographic and self-assessment variables (Table 17). Correlation significant at the 0.01 and 0.05 level is marked "**" and "*", correspondingly. Overall, the schools showed a difference in self-assessment in three out of four IL components. Level of study also affected students' self-rating. Students who were at a higher academic grade also thought more positive of their IL level (r > 0). However, there was only a small correlation between the two above variables, because r < 0.29. In addition, there was no correlation between gender and students' IL self-assessment (see Appendix 38, Section 12 for further details).

Table 17. Correlation between demographic data and information literacy self-assessment

Testing areas	School	Gender	Level of study
Developing search strategies	**-.165***	-.015	.086
Evaluating information sources	**-.172***	-.007	.053
Using information ethically	-.111	-.094	.082
Using English to engage with information effectively	**-.272****	.007	.120
Overall IL level	-.114	-.023	**.271****

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

5.2.2.12. Correlation between information literacy testing areas variables

Pearson Correlation Coefficient was employed to investigate correlations between IL components (Table 18). It was found there was a positive linear relationship between IL testing areas ($r > 0$) (see Appendix 38, Section 13 for further details). In other words, students who had better performance in skills at earlier stages of the information engagement process also had a better performance in skills at later stages. For example, students who were good at developing search strategies might get higher scores in evaluating and using information.

Table 18. Correlation between information literacy testing areas variables

Testing areas	Developing search strategies	Evaluating information sources	Using information ethically	Using English to engage with information effectively	Overall IL level
Developing search strategies		.287**	.277**	.285**	.803**
Evaluating information sources			.234**	.188*	.569**
Using information ethically				.267**	.567**
Using English to engage with information effectively					.669**

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

5.2.2.13. Correlation between information literacy scores and self-assessment

Employing Spearman Correlation Coefficient, it was found that there was a positive linear relationship between overall IL scores and self-assessment (Table 19). In other words, students who self-rated their IL at a high level also had better IL performance. Nonetheless, it roughly appears that there was only a weak correlation ($r < 0.2$). Similarly, concerning IL testing areas and students' self-assessment, there was a linear relationship between scores of developing search strategies, using information ethically and using English to engage with information effectively and students' self-assessment ($r < 0.2$) (see Appendix 38, Section 14 for further details).

Table 19. Correlation between information literacy scores and self-assessment

Self-assessment areas	self-rated information search	self-rated source evaluation	self-rated information use	self-rated English use	self-rated IL level
scores of developing search strategies	**.162***	.096	.052	**.147***	.117
scores of evaluating information sources	-.100	-.048	.049	-.105	-.044
scores of using information ethically	.073	.093	**.163***	.009	.138
scores of using English to engage with information effectively	.080	.051	**.206****	**.171***	**.260****
scores of IL level	.103	.075	**.171***	.141	**.192***

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

5.2.2.14. Correlation between hearing/reading about information literacy and information literacy scores/self-assessment

The students were asked whether they had heard or read about the term IL. The results indicate that, out of the 183 students, the percentage of the sample hearing or reading about the term was 12% in comparison with 88% of those who had not heard or read about the term. Chi-square test was then used to understand whether there was a relationship existing between hearing/reading about IL and IL scores, as well as between hearing/reading about IL and IL self-assessment. It can be seen that there was no relationship between

hearing/reading about the term and IL scores. In other words, hearing/reading about IL did not affect students' IL scores ($X^2 = 3.169^a$, df = 2, p = 0.205). However, there was a relationship between hearing/reading about the concept and students' IL self-assessment, where $X^2 = 8.107^a$, df = 2 and p = 0.017 (see Appendix 38, Section 15 for further details).

5.2.3. Students' conception of information literacy

In the questionnaire, students who had read or heard about the term (22 students) were asked what IL meant to them. It was found that students had different conceptions of IL. Their answers were then coded and divided into four categories, as presented in Table 20.

Table 20. Students' conception of information literacy

Order number	Category	Students' answers
(1)	Using information	*IL is the ability to use information reasonably and correctly.* (BS5)
(2)	Finding information	*IL is the way we find information.* (BS16)
(3)	Evaluating information content	*IL is the ability to understand correctly information provided.* (BS17) *IL is the ability to understand and update information.* (BS46) *IL is the ability to understand the meaning of information.* (CS57) *IL is the ability to understand information and news that we update daily through the Internet, books, journals, etc.* (BS41)
(4)	Knowledge	*IL is knowledge that I need to know.* (BS34)

(1) Regarding the first category – using information, this student emphasised on the ability to use information. He also mentioned "reasonably and correctly" in his notion. It seems issues related to the ethical use of information were stated in his explanation.

(2) With regard to the second category – finding information, one student believed that knowing how to find information is necessary to become information literate. This student indicated that information literate individuals need to know methods or techniques to search for information in order to satisfy their information need.

(3) Meanwhile, four other students viewed that understanding the meaning of information is the focus of IL. In practice, individuals can understand the meaning of information through the evaluation of the content of information. Hence, it can be assumed that these students mentioned the ability to evaluate information content in their explanations.

(4) Finally, the idea 'IL is knowledge' was agreed by the remaining students (16 students). They gave similar answers to show that IL is knowledge about the world that they need to know.

In sum, students had different viewpoints concerning IL. However, it can be said that they did not have a comprehensive understanding of the IL concept.

5.2.4. Summary to Section 5.2

As mentioned in the context chapter (Section 2.2.1), there are changes in the education system to improve the quality of education and develop lifelong learning. It was expected that students' IL level should be high. However, the statistical results indicate that students' IL level was not as advanced as expectation because the percentage of students achieving high scores in the IL test was too low. Therefore, more work needs to be done to improve and enhance students' IL capability. However, how students find, evaluate and use information was not explored through the statistical findings. Furthermore, the study found that students' academic capability and their IL self-assessment had an impact on their IL capability. This raised the question as to whether there were any other factors affecting students' IL. Finding the reasons could be helpful in proposing suggestions for an appropriate IL programme. In addition, the study reveals that students had a poor understanding of the IL concept. The interview data that will be presented in the following sections will provide an insight into these issues.

5.3. Interview findings

5.3.1. Students' information literacy skills

This section, based on the student and professional interviews, presents students' experiences in developing search strategies, evaluating information sources, using information ethically and using English to engage with information effectively. This aims to strengthen and provide an insight into the IL assessment results. In general, the IL assessment found that students' IL had not been developed comprehensively. This finding was reinforced by professionals, as below.

> *I think the result of the students' IL assessment is true.* (BT3)

> *I think this survey result is something as a matter of course. It is obviously true in reality.* (CT3)

According to the interviewees, the result did not come as a surprise. They totally agreed that students' IL capability needed to be improved and the IL assessment results precisely reflected students' IL capability in practice.

5.3.1.1. Information search

The assessment measured students' search skill by using different search techniques and tools, for example, truncation and Boolean. The interviews were then conducted to explore which techniques and tools students most often used to find information by questioning how they searched for information. It was found that students mainly used library classification systems and keywords to search for information. The first was used to find paper documents and materials, such as books and newspapers, whilst the second was employed to search for online information.

> *For example, in my school library, history books are classified based on major periods of history. If I want to find information about a certain period, I just go to those bookshelves…I also search for information on the Internet using keywords.* (BS74)

> *I often type keywords directly into the search box. If I cannot find the information that I need, I will then shorten those keywords.* (BS55)

I find information on the Internet using specific terms. (BS10)

I sometimes read books in the library. My school library classifies books based on subjects, so I can find information for my subjects easily. (CS51)

I search for information on Google using keywords. (CS91)

I mainly type keywords into the Google search box. (CS28)

It seems students rarely used the search techniques and tools that were mentioned in the assessment, such as search fields, Boolean and OPAC. Interestingly, out of the three groups of students, only high scoring students found documents/materials using the library classification system. As for those who achieved average and low IL scores, they did not share any experience in using the library classification system. They primarily used keywords to search for information. The library can be considered a place which provides appropriate documents/materials to serve students' learning. Knowing how to use the library in general, and the classification system in particular, is necessary. However, it seems there were not many students using it. They mainly preferred to use simple search techniques, not doing sufficient or more complex searches to find what they needed.

The student interview results support the findings of the IL assessment in indicating that almost all students were interested in Google rather than other search tools.

We search for information via Google. (CS28)

If I am not sure whether the information is true or not, I will use Google to search for the information separately in order to check for accuracy. (BS74)

Students have many choices to find information using various search tools. Nevertheless, it seems students gave priority to Google over other search tools. In fact, when asking students how they found information, the first thing that came to their minds was Google.

This result is also confirmed by the professionals who pointed out that students preferred to search for information using online search engines.

> *They like searching for information on the Internet and using search tools, such as Google and Yahoo, rather than other means.* (CT2)

> *It's often said, "if we do not know something, we should Google it." This may affect students' information-seeking behaviour. They do not like reading books and newspapers. They prefer to use computers and they think they can Google everything.* (CT3)

The professionals were aware that students predominantly utilised online search engines, such as Google, to find information using simple search techniques, for example, keywords. They confirmed that students were not interested in using other search tools or reading books. According to the professionals, lack of patience could result in the superficial use of Google to search for information.

> *Students can obtain many search results using Google. However, take using online catalogues as an example, if they type a wrong keyword into the search box or if there is something wrong with the software, it may not provide any suggestion or result. This causes students to lose patience. As for online search engines, they provide many results, suggestions and everything related to what students are looking for. Therefore, students prefer to use these.* (BL)

It can be seen that the convenience and ease of information access is one of the advantages of online search engines. Students can retrieve a huge amount of information in a very short time by using simple search techniques. Consequently, students may not make an attempt to use other search tools, even though they can provide students with high quality information.

5.3.1.2. Information evaluation

The IL assessment showed that students were more successful in searching for information than evaluating information sources. The professionals strengthened this finding in indicating that students did not have the necessary skills to identify appropriate and authoritative information sources.

Based on my teaching experience, I know that students are better at finding information through lessons in school and self-learning activities. Students' information evaluation skills are at an average level, simply because there is so much information and we do not have any standard to know whether the information is true. (BT3)

Actually, students know how to use Google to search for information…but they do not know how to select the appropriate information. (CT1)

I think students do not know which information source is appropriate or inappropriate. If they think it is appropriate and good enough, they will use it. They do not even care whether the information sources are appropriate and reliable. (CL)

The professionals were aware that students had better performance in searching for information than evaluating it. According to administrators and teachers, students' evaluation skills were not good enough to enable them to select appropriate information sources. They evaluated information sources in a very simple manner. They even used under-evaluated information sources.

It seems students were not familiar with the techniques used in the IL assessment to evaluate information sources. The methods that they utilised to evaluate information sources were explored, as follows.

- ***Familiar web pages***: students gave priority to web pages that they often used.

When I use Google to search for information, I look at the name of the web pages. If it is Wikipedia[40] *or Violet*[41]*, I will access those web pages first. If they do not provide the information that I need, I will access other web pages.* (BS74)

[40] Wikipedia is an open encyclopedia and it is the result of the collaboration of readers from around the world.

[41] Violet is the social network of the teacher community in Vietnam. It is used to share teaching resources. This site operates under the control of Bach Kim Computing Corporation.

When I access the Internet, I often look for the latest breaking news on Tuoi Tre and Dan Tri[42]. (CS51)

I trust information sources that I often use or have some experience with. (CS28)

It can be seen that students trusted information sources that they used or knew. It seems students believed that those web pages (e.g. Wikipedia, Violet, Tuoi Tre, Dan Tri) could provide them with trustworthy information. However, this is not necessarily the case. Although students preferred to use web pages that were mentioned above, it seems they still did not understand the essence of those sites. For example, students used and updated information on online broadsheets newspapers, such as Tuoi Tre and Dan Tri. Students can use these sources to update the latest information regarding economy, entertainment, etc. However, in practice, information on those web pages is not carefully reviewed. Therefore, students might retrieve inappropriate and unreliable information.

- ***First results***: students believed "first come, first use". This means they gave priority to the results that were retrieved first.

  Normally, if we use Google to search for information, we should find information on page 1, 2 and 3 of Google. Other web pages are not trustworthy anymore. (BS74)

  I access each site to see which one is relevant. I then combine information from those sites and then use them for my work. (BS55)

  We collect information page by page. (CS28)

It can be seen that students collected information page by page. They read through sites that were retrieved first and they then selected information that they thought was appropriate. However, they did not explain exactly what they meant by appropriate information; it could be information that was relevant to their work and had a connection with what they were looking for. First results could be the most relevant results, but, even so, nothing guarantees that they are reliable and high quality information sources.

[42] Tuoi Tre and Dan Tri are daily broadsheets or tabloids newspapers in Vietnam.

- ***Reduplication***: the reduplication of information was considered a standard that helped students evaluate whether an information source is trustworthy.

  The leading newspapers in Vietnam often publish information that tends to be similar, so we can trust them. (BS74)

Students trusted information sources providing information that could be found in other sources. However, the rapid increase in the amount of published information and issues surrounding copyright infringement may result in the presence of similar information. Therefore, information that is highly reduplicated may not be obtained from reliable sources. There is a concern that, if students evaluate information sources in this manner, and if misleading information is provided, students may not find high quality information.

- ***Author name***: it was found that students evaluated information based on authors' names.

  The leading newspapers often place the author's name at the end of articles. In Vietnam, they often abbreviate the name using two letters, so I do not trust them. (BS74)

It seems students were more confident to use information sources that provide the author's full name. Using the author's name to evaluate information is still used in many cases, for example, works are published by big names and well-known authors. However, the use of an author's full name is a questionable technique for evaluating information.

- ***Peer review***: students also believed that peer review could help them identify the value of information sources.

  I often see comments that are provided by other users related to what I am searching for. I consider what they say and I then decide whether to use the information or not. (BS55)

  We can tell whether information is true or not based on user comments. (BS10)

Peer review/user review was considered a technique that school students used to evaluate information sources. In practice, peer reviews are commonly used in many cases, for example, book reviews. The use of reviews/feedback to evaluate information sources may bring benefits to students, such as obtaining an understanding of the information source as well as the quality of information. However, there is a concern as to how students can decide which user review is trustworthy within a large number of reviews.

- ***Access rate/user number***: user number/access rate was also considered an indicator to help students recognise a high quality information source.

  I often use web pages that are accessed by many people. (BS10)

Students also evaluated web pages based on the number of users and access rate. They preferred to use web pages that are accessed by many people. This means the higher the access rate is, the better is the quality of the information sources. In practice, user number/access rate could be considered a factor that reflects the impact of a web page. However, several sites do not provide information related to the number of users or access rate.

- ***Third party***: students used a third party to evaluate information sources.

  If my teachers access a web page, this means it is reliable…We can easily check information on the Internet by asking older people. This can help us obtain more accurate information. (BS10)

It can be seen that students trusted information sources in general, and web pages in particular, that were used by their teachers. They also sought advice from older people, such as teachers, parents and siblings, in order to help them identify high quality information sources. This might afford advantages to students in evaluating information sources. However, there is a concern that students may become passive in seeking information if they trust information sources that have been used by their teachers without understanding the reasons why. This also raises the question of how, when students leave

school and have no chance of referring to teachers for help anymore, they will work out which information sources are appropriate.

5.3.1.3. The ethical use of information

The IL assessment indicated that students achieved the best performance in using information ethically in comparison with the three other IL components. This result is confirmed by the interview data showing that students had some knowledge related to ethics in using information in general and copyright laws in particular.

> *Newspapers have recently published information concerning copyright laws, so I know them.* (BS74)

> *As for copyright laws, I know them when I read about them in newspapers, but I do not know them in detail.* (CS51)

The student interviews also indicated that, although students achieved high scores in the paper test and were aware of ethics in using information, they did not comply with the ethical regulations in using such information.

> *Normally, I just copy and paste.* (BS74)

> *When we do our own assignments, we sometimes copy important information from other assignments and from where we find information.* (CS28)

It can be seen that, although students had some knowledge related to ethical issues in using information, they did not obey them in practice. This was confirmed by teachers, as below.

> *Many students rashly cut and paste information without citing. I read a lot, so I know…They may have some knowledge of copyright laws and ethics in using information, but they do not follow them.* (BT2)

> *As for copyright laws, if you ask students "what is copyright law?" I believe that 20%-30% of students could give the exact definition. However, that does not mean they obey it in practice.* (BT3)

They often copy information from the Internet. There are some students who do assignments by themselves, but many virtually copy from other sources and submit their work to me. (CT1)

The study reveals that students have some knowledge of ethics in using information. However, in practice, they did not obey ethical guidelines. Students still used information in an arbitrary way and did not care about ethical issues. They simply copied and pasted information that they had. Some students simply reused others' assignments by copying important information and then adding more to it.

5.3.1.4. The use of English to engage with information

The IL assessment showed that students achieved better scores in using English to engage with information than developing search strategies and evaluating information sources. This might result from the fact that the study was conducted in two schools located in a big city where students have more opportunities to study English; therefore, they might be good at using English.

Students in this school have learned English from an early age, because they live in a big city. Their English curriculum is very different in comparison with schools in rural areas. Their English may not be too good, but it is not too bad. (BL)

However, the interviews reveal that English was not widely used in seeking information. Average and low scoring students could not share any experience in using English to engage with information. Meanwhile, one of the high scoring students had some experience regarding using English to interact with information.

I study English in foreign language training centres. Teachers often require me to search for information related to lessons and they provide me the keywords. (BS74)

Teachers also said that:

In practice, students mainly use Vietnamese to search for information. They rarely use English. (CT2)

Students mainly use Vietnamese keywords. They do not often use English to search for information. (BT1)

It can be seen that students primarily used English keywords to search for information. In the context in which students interact with many English information sources, knowing how to use English to engage with information is essential. However, the behaviour of using English to engage with information had not yet been shaped. It seems teachers did not encourage students to use English information sources, because the behaviour of using English to engage with information had been formed from private classes, not from the schools.

5.3.2. Factors affecting students' information literacy

There are a number of factors that affect students' IL, including internal and external factors. In this study, internal factors are derived from the students themselves, while external factors are originated from students' study environment. Furthermore, whilst internal factors directly result in the imbalance in the IL level of students, external factors mainly affect students' IL skills.

5.3.2.1. Internal factors

5.3.2.1.1. Students' awareness of information literacy

In the interviews, participants were provided an explanation of the IL concept to help them understand what IL means. The study then explored students' awareness of IL regarding the importance of IL, the role of IL to learning success, and the new active teaching method that is implementing in their schools. It was found that students' awareness of IL might result in different IL scores. The study indicates that students' awareness of IL was directly proportional to their IL capability. This means students who had higher awareness of IL also had better IL performance.

- ***Awareness of the importance of information literacy***

There was a difference among the three groups of students concerning their awareness of the importance of IL. Particularly, high scoring students thought that IL was very necessary to students in general.

IL is very necessary. (BS74)

IL is very necessary because of the information explosion, online libraries and the large amount of information on the Internet. There is too much information, so we face many challenges in selecting appropriate information for use. There is information that we can find effortlessly, but it may be untrue or unreliable. Therefore, we need to have knowledge, we have to learn IL in order to search, evaluate and then use the information effectively. (CS51)

Similarly, average scoring students also had a positive viewpoint about IL.

I think that IL helps us find much more information without wasting our time. (BS55)

I think that IL helps us understand and know much more, and broaden our minds…It is rather important. (CS91)

It can be seen that IL was very necessary to high and average scoring students. They were aware of the challenges that are caused by the digital age. They viewed IL as a helpful tool that enables them to engage with information more effectively in the digital age.

As for low scoring students, the importance level of IL was slightly different in comparison to the other two groups.

IL is also unnecessary because it does not affect my life too much. (CS28)

IL may be important, but not now. (BS10)

There is a noteworthy point that low scoring students thought IL had no significant impact on their lives. This view is quite different from the other two groups of students. It can be said that the low scoring student group had lower awareness of the importance of IL in comparison to high and average scoring students. This might result in obtaining lower IL scores in the assessment.

- ***Awareness of the role of information literacy to learning success***

Similarly, the awareness of the role of IL to learning achievement among the three student groups was quite different. The interviews indicated that students who had higher awareness of the role of IL to learning success also showed better IL performance. Specifically, high scoring students thought that IL was important and very necessary to their learning.

> *For example, when I do literature essays, I need to use citations. If I know how to find appropriate citations, my essays will be more concise and achieve high scores. Or, when I do a presentation, if I can provide essential and appropriate information, listeners will be interested in it.* (BS74)

> *I think that opinion is absolutely right…What we learn from the school may not be sufficient...If we want to explore an issue in more depth, we have to search for more information through books, newspapers and social network sites. If we want to explore an issue in more depth, we have to use those sources. However, we also have to know how to select information.* (CS51)

High scoring students appreciated the important role of IL to their learning success. According to these students, learning success means achieving high scores and obtaining a deep understanding of the issues. They were aware that what they had been taught by the school might not support their learning activities as effectively as expected. Therefore, the search for knowledge outside of the school was extremely necessary. Seeking information outside of the school could help them obtain high scores for their assignments and presentations. Therefore, they believed that IL could help them reach that aim.

Interestingly, average scoring students also agreed that IL was important, but its importance level was displayed differently in subjects.

> *For example, some students do not know how to find appropriate information that can be used for their presentation. If we know, we can get higher scores.* (BS55)

> *Textbooks mainly provide general information. Therefore, if we want to have a more in-depth understanding of issues, we need to find information beyond textbooks…However, we do not need IL for Maths, we only need to follow the*

teachers' instructions. IL is necessary for some subjects, such as literature, English and subjects that require students to do essays. (CS91)

It can be seen that average scoring students did not deny the important role of IL to their learning. They still thought IL was necessary to help them obtain appropriate information in order to support their learning. As a result, they could achieve better results in learning. However, it is interesting to find that average scoring students thought IL was mainly necessary for social science subjects, for example, literature, whereas, in contrast, IL was not required for natural science subjects (e.g. Maths).

As for low scoring students, they did not think that IL was necessary for their study.

I do not think it is that important for us to pay much attention to it, because we have been taught by teachers what we should learn. (CS28)

I do not think it is too necessary to students at this level. (BS10)

It can be seen that the role of IL in learning success was not highly appreciated by low scoring students. They believed that they could gain knowledge from their teachers.

- ***Awareness of the new active teaching and learning method***

As discussed in the study context chapter (Section 2.2), Vietnam's schools are in the process of replacing the traditional teaching method by a new active mode of teaching. The new teaching approach requires students to be more active in their learning. The study found that students who had a higher awareness of this process also achieved higher IL scores. According to high scoring students, constructing their own knowledge was essential.

At present, teachers increasingly require us to provide evidence outside of textbooks. The more evidence we offer, the higher scores we get. (BS74)

I think we should have a more in-depth understanding of issues rather than memorising every word in textbooks, because that is just rote learning…I do not like

the traditional teaching method. Even though it is a natural or social science subject, we still need to develop our own thinking. (CS51)

Similarly, one of the average scoring students also thought that developing their own thinking was necessary, as below.

When we write a social essay, we need to have new ideas and develop our thinking. (CS91)

It can be seen that high and average scoring students displayed a propensity of seeking information beyond textbooks instead of passively receiving knowledge from their teachers. They highly valued the development of independent thinking and knowledge construction.

Nevertheless, low scoring students did not think in the same way as the above students. They still believed that teachers could help them obtain all that they need.

I do not think it is that important for us to pay much attention to it, because we have been taught by teachers what we should learn. (CS28)

This statement not only shows that students did not highly appreciate the importance of IL to their learning achievement, as explained above, but also that they did not pay much attention to the development of independent thinking. They were still in favour of the teacher-centred study environment.

From what has been discussed above, it can be said that students' awareness of IL may affect their IL capability. This viewpoint was strengthened by the professionals, as below:

Being good at IL or not depends on students' awareness. Although students are at the same age, those who highly value seeking information can develop their skills better than those who do not pay much attention to such things. (BL)

Students who express a desire to have a more in-depth understanding of issues and enhance their knowledge will develop such skills. (BT2)

The above interviewees pointed out that, although students studied at the same level, their awareness of activities/skills related to IL might be different. Students with higher awareness of IL might become more eager to improve their IL skills than those who did not highly appreciate the value of activities/skills related to IL.

The IL assessment found that the public school's students scored better in the IL test than their peers in the private school. This can be explained by the dissimilarity between students in the two schools regarding their awareness of IL.

> *Public school students are more attentive to find information to support their learning than private school students. Private school students mainly study in the school and they do not think that finding information is important.* (CL)

> *Public school students' self-awareness and entrance scores are higher than private school students…Private school students sometimes do not want to study, although teachers try to help them. I even have to entreat them to go to the school; they do not think that they need to seek information to learn.* (CT1)

The professionals assumed that the private school students' awareness in general, and awareness of IL in particular, was lower than their peers in the public school. Therefore, the private school students did not make every effort to engage with information. This might affect their IL capability.

At the same time, students' awareness of IL might be used to explain the difference between the three groups of students (Grade 12, Grade 11 and Grade 10) concerning their IL scores.

> *The awareness and academic capability of Grade 11 students is not as good as Grade 10 and Grade 12 students. Grade 11 students are more familiar with the high school environment than Grade 10 students. Grade 11 students do not need to prepare for the graduation examinator to enter universities like Grade 12 students.* (BL)

The above interviewee indicated that Grade 10 and Grade 12 students' awareness in general was better than Grade 11 students. This might cause Grade 11 students' IL scores to be lower than the two other groups.

5.3.2.1.2. Students' academic capability

The IL assessment found that students' academic achievement might have a positive impact on their IL performance. This finding is strengthened by the professional interview results.

> *Public schools often organise entrance examinations to select students for admission. Therefore, public school students' thinking and academic capability is better than private school students. As a result, the ability to search for information to support their learning will be better than those who study in private schools.* (CT2)

> *Public school students' self-awareness and entrance scores are higher than private school students. Take my school as an example, my school's entrance scores are very low.* (CT1)

It can be seen that entrance examinations allow the public school to select students who had better academic capability. This means the academic capability of the public school students was better than those who studied in the private school. This issue was also presented in the context of the study chapter. This may reveal that students' academic capability positively affects their IL level.

Additionally, the IL assessment found that Grade 10 and Grade 12 students achieved better IL scores than their peers in Grade 11. The professionals indicated that this resulted from the differences between the three groups of students regarding their academic capability.

> *The awareness and academic capability of Grade 11 students is not as good as Grade 10 and Grade 12 students.* (BL)

> *I do not know why, but, in my experience, Grade 11 students' learning capability is weaker than Grade 10 and Grade 12 students. They are less assiduous than Grade 10 and 12.* (CL)

The above interviewees indicated that, although Grade 11 students were at a higher academic level than Grade 10 students, their learning capability was not as good as Grade 10 and Grade 12. It was suggested that this factor should be considered to explain the differences between the three grades concerning their IL capability.

5.3.2.1.3. Learning information literacy

It was found that students primarily taught themselves skills related to IL. Therefore, IL self-learning might be the reason for the resulting different IL scores. Students who were better at taking full advantages from activities, both within the schools and outside of the schools, also had higher IL scores. These activities are summarised in Table 21. These activities might not directly provide students with instructions related to IL, but they encouraged students to engage with information. This might have an impact on students' IL capability.

Table 21. Information literacy learning between the three groups of students

Order number	Activities	Low	Average	High
1	Homework		X	X
2	Textbook use	X	X	X
3	Activities outside of the class			X
4	A inclination to get support from family		X	X
5	Library use			X
6	Teachers' instructions	X	X	X
7	Peer support	X	X	X
8	Follow information channels			X

(1) ***Homework:*** it was found that the IL capability of high and average scoring students was developed through doing homework. Homework can be provided in the form of doing exercises, preparing for the next lesson or a presentation, and answering a question provided by teachers. Students need to be active and take more effort to engage with information in order to complete successfully their tasks. This might motivate them to develop the required IL skills.

We need to search for information at home in order to prepare for presentations or the next classes. Take Chemistry as an example, in the second semester of Grade 12, there was a lesson related to environment protection. At that time, we needed to find information regarding the impact of toxic gases to the environment, water and so on. In that case, an information search was conducted. (BS74)

I can develop my IL through homework…Take History exercises as an example, my teacher often asks me to watch some movies and find some more information in advance in order to prepare for the next class. Therefore, I have to search for information to meet the requirements of my teacher. (CS51)

I sometimes have to find more information to complete my homework. (BS55)

In fact, all students have to do homework, not just a specific group of students. They need to engage with information in order to complete their tasks successfully. However, it seems only high and average scoring students made an attempt to engage with information to complete their work. On the contrary, low scoring students did not share any experience about this. Thus, high and average scoring students might become more familiar with the information engagement process than their peers. Accordingly, their IL skills might be improved.

(2) ***Textbook use***: all three groups of students agreed that their IL capability could be developed through using textbooks.

I find more information on the Internet to answer questions in textbooks. (BS74)

Textbooks have advanced questions so I have to search for information outside of textbooks to answer them. (CS91)

There are questions at the end of each lesson…Textbooks provide some information to help students answer those questions, but we have to search for more information to have a more in-depth understanding of the issues. (CS28)

Textbooks are considered the main learning material source of students in Vietnam. Each lesson in the textbooks includes the main content and additional questions. The design of the textbooks, with the emergence of extra questions, might encourage students to engage with information outside of the textbooks in order to answer those questions. As a result, students' IL skills might be developed.

(3) ***Activities outside of the class***: it was found that only high scoring students took part in activities outside of the class, such as academic clubs, social activities and extracurricular activities.

> *I sometimes write essays that are provided by the Ho Chi Minh Communist Youth Union[43] and academic groups in my school. I have to learn about events and find information to write essays.* (BS74)

> *I sometimes need to find information when I take part in activities of the Ho Chi Minh Communist Youth Union in my school or in social activities.* (CS51)

However, average and low scoring students primarily concentrated on their study. They did not take part in any activity outside of the class.

> *I do not take part in any activity in the school except study…I was told that there were extracurricular activities in the school, but I do not take part in any of them because I do not think they are important.* (BS55)

> *I do not participate in any activity outside of the class, so I do not know whether they can help me develop my IL.* (BS10)

> *I never take part in academic clubs and extracurricular activities in my school.* (CS28)

It can be seen that, although high scoring students shared some experience regarding taking part in activities outside of the formal study curriculum, average and low scoring students

[43] The Ho Chi Minh Communist Youth Union is the largest political and social organisation of young people (aged 16-30) in Vietnam.

did not pay much attention to such activities. Participating in those activities was optional. Such activities might not provide IL instructions to students, but they did encourage students to engage with information. As a result, students needed to develop necessary skills by themselves to complete the tasks.

(4) ***An inclination to get support from family***: this section mainly concentrates on exploring students' inclinations to get support from their family in solving information problems. It was found that high and average scoring students often asked for help from their family when they faced challenges in information engagement. Nevertheless, this issue was not mentioned by low scoring students.

> *If I do not know, I will ask my parents. They can tell me things. Sometimes they do not know the answer, but they will give me some books to read to understand more.* (BS74)

> *As for issues that have multiple streams of different opinions, I will ask my parents, brothers and sisters or older people to help me find the appropriate information.* (BS55)

> *I sometimes ask my brothers and parents. They sometimes give me useful answers.* (CS91)

Seeking help from family might demonstrate that students were relatively active in engaging with information. This might enable them to gain helpful experience in the engagement with information. Consequently, their IL skills could be improved.

(5) ***Library use***: library use can be considered a factor that promotes the development of IL of students. It was found that high scoring students tended to use the library more often than the two other student groups.

> *My school library classifies learning materials using a classification system. Therefore, if teachers ask me to find information related to lessons in their subject, I will go to the bookshelves to find books.* (BS74)

For example, I took part in the Literature Olympic Contest. So, I borrowed some of the many books in the library, and I also searched for more information on the Internet using the library computer. (CS51)

It can be seen that high scoring students know how to make use of library resources to cater for their learning purposes, for example, doing homework or contest participation. These students often used the library, so they knew how to use the library classification system to find information, as explained above (Section 5.3.1.1). This might help students improve their IL. However, average and low scoring students were not interested in using the library.

I do not read books in the library. (BS55)

I do not know, because I never go to the library. (CS28)

According to average and low scoring students, they never used the library to cater for their learning; therefore, they did not know what the library could offer them. The library might not deliver any IL instruction, but students might have more opportunities to engage with information.

(6) ***Teachers' instructions:*** this section mainly focuses on students' inclinations to get support from their teachers. All interviewed students shared experiences regarding seeking help from their teachers in solving information problems. Although teachers did not provide any formal teaching activity related to IL, they could give advice concerning engaging with information to help students complete their work.

I also ask my teachers to learn how to find that information. (BS74)

I often ask my teachers to help me find information. They then provide me with examples or keywords to help me find information at home. I will take notes in my notebook and then search for information at home. I will compare my own search with what the teachers provide and, that way, I can find what I want. (BS55)

When I do projects, if I feel it is too difficult, I can ask my teachers. They will show me simple techniques to find the information. (BS10)

If I am not sure whether the information is reliable or not, I will ask my teachers. (CS28)

I often ask my teachers. They can give me advice. (CS51)

It can be seen that students might be provided with instructions related to IL if they asked for help from their teachers. However, it seems teachers mainly concentrated on information search using simple techniques rather than information evaluation or information use. For example, they provided students with keywords in advance to help students find information at home.

(7) ***Peer support:*** students also sought help from their friends when they found information.

I search for information in different sources and then discuss with my friends to find which is the most appropriate. (CS51)

Normally, after I finish a search, I will ask my friends or teachers to redefine whether the information is true. (BS10)

For example, I can ask my friends how to find information related to that place. (CS28)

I sometimes discuss with my flatmates to ensure the information is correct. (BS55)

It can be seen that students also asked for help from their friends. Students might gain useful advice from their friends which could help them engage with information effectively. However, there is a concern that their friends' instructions may not be good enough. Therefore, what students learn from their friends should be reconsidered.

(8) ***Follow information channels***: it is interesting to find that high scoring students often followed several information channels to update information, while average and low scoring students did not share any experience regarding this issue.

> *I read three newspapers every day. Actually, newspapers provide us with a lot of information, so reading them helps us enhance our knowledge.* (BS74)

> *I often watch news on television and listen to the radio. I love to listen to the radio. I always listen to the radio at 6am every day. Information from this source is more accurate and reliable, and I also read several online newspapers, such as Tuoi Tre and Dan Tri.* (CS51)

The habit of regularly updating information through different information channels, such as online newspapers, radio and television, might help students engage with information more than their peers. This habit might not directly help students develop the necessary skills to engage with information, but it could affect their awareness of issues surrounding IL. For example, the schools did not give students any instruction related to copyright laws. However, as discussed above (Section 5.3.1.3), high scoring students knew about copyright laws from newspapers and radio.

In sum, it can be seen that students had not learnt any formal IL programme. Their IL capability was mainly developed by being motivated to take full advantage of activities within and outside of the school. The results also show that such activities might not directly provide IL instructions to students, but they encouraged them to interact with information. As a result, students' IL might be improved. This finding is reinforced by the professionals.

> *Take extracurricular activities as an example, we sometimes organise tours that allow students to visit some famous places. This is an opportunity for them to enhance their knowledge and they can then conduct a search to explore issues in more depth.* (CM)

> *Take library activities as an instance, the library sometimes organises activities, such as writing book reviews. However, although such activities are very helpful, they do not receive much attention from students.* (BT2)

Students sometimes need to do projects that require them to find information. However, in practice, there are only a few student groups involved in the projects. (CT1)

The professionals pointed out that the schools delivered a number of activities to students, such as extracurricular activities, group projects and library activities. Although such activities did not directly provide students with IL instructions, students were encouraged to actively involve in the information engagement process. However, such activities did not receive much attention from students. Consequently, students who participated in such activities might be better at engaging with information than those who did not take part.

5.3.2.2. External factors

5.3.2.2.1. Teaching staff

It was found that teachers' IL capability might affect the development of their students' IL.

I use keywords to search for information via Google in order to know how to Google it and why Google provides such results. I then instruct my students how to search for information effectively. (BT3)

I just give them very vague instructions. For example, using a keyword like "water sport" to search for information on the Internet. I do not know how to instruct them to find information correctly. I mainly recommend they use Google. (CT3)

As explained in the previous sections, students preferred to use simple search techniques (e.g. keyword) and Google to find information. Similarly, the professional interviews indicated that teachers searched for information in the same manner. Specifically, teachers mainly used keywords to search for information through Google. Furthermore, according to the teachers, they primarily provided their students with instructions related to using Google and keywords to find information. The similarities between teachers and their students regarding seeking information may prove that teachers' IL skills significantly affect their students' IL.

Similarly, the study found that teachers were not good at evaluating information, as stated by one of the teachers:

> *If you now asked me to evaluate an information source, I would not know how to do it. I simply bookmark websites if I feel that they are appropriate. If you want to evaluate information, you need to know which standards can be used. However, I do not know those standards.* (BT1)

The research demonstrates that students were poor at evaluating information sources in comparison with other skills. At the same time, teachers admitted that they were not good at information evaluation. Therefore, they might not be able to provide appropriate instructions related to information evaluation to their students. This might affect their students' evaluation skills, as explained above.

5.3.2.2.2. Support from family

This section primarily concentrates on the support that families reserve for their children's learning rather than analysing students' inclinations to seek support from their family, as presented above (Section 5.3.2.1.3). The study found that the proactive support from the family might positively affect their children's IL capability. According to one of the high scoring students, her family paid great attention to her study.

> *My parents often introduce good books and websites to me to help me obtain useful information.* (BS74)

While the above high scoring student received great attention and interest from her family, low scoring students were not given much support by their parents, as follows:

> *Normally, my parents do not pay attention to my study.* (BS10)

> *No, my parents do not show me how to deal with information problems.* (CS28)

It can be seen that there was a difference between the two groups of students regarding their family support. High scoring students received more support from their family for their learning than their peers who scored lower in the IL test. Their family might not provide

their children with IL instructions, but their attention might encourage their children to engage with information. As a result, students' IL capability could be improved. This view was reinforced by one of the teachers, as follows:

> *I think students do not have time to study because their parents cannot control them. If parents can control their children, students will study very well and make an effort to search for more information.* (CT1)

The above teacher believed that family support could affect students' learning in general and IL in particular. Students who received more attention from their family would be motivated to engage with information and develop the necessary skills to support their learning.

5.3.2.2.3. Teaching method

The IL assessment indicated that the number of students who achieved high IL scores was low. This can be explained by the existence of the traditional teaching method that does not encourage students to engage with information and construct their own knowledge.

> *I think the traditional teaching and learning approach affects both students and teachers. It does not encourage students to develop search and reading skills.* (CM)

> *At present, we still use the traditional teaching method that follows the teacher-centred model. Therefore, students are not encouraged to find information.* (CT3)

> *Students are not motivated to find information or the like when many teachers still require them to memorise lessons.* (BM)

As presented in the context of the study chapter, Vietnam's schools are in the process of replacing the transmission approach in teaching by a new teaching method that focuses on promoting students' active learning. However, the interviewees indicated that the schools still employ the traditional teaching method. This might result in a lack of motivation to engage with information among students. Accordingly, this might have a negative impact on the development of students' IL.

Teaching methods can be used to explain the imbalance of IL level between the public school's students and the private school's students.

> *We always have to think about students' learning results, because my school's entrance scores are very low…Teachers have to pay great attention to students, because this is a private school. Therefore, students are too dependent on teachers. For example, if my students do not want to search for information, I have to do it.* (CT1)

> *Private schools' teachers are required to do everything for their students. Therefore, students are too dependent on their teachers and students cannot develop their search skills…As for public schools, we often ask students to find information and do presentations much more than private schools. This helps students develop their search skills. In private schools, students are also required to do the same thing, but students do not need to if they do not want to.* (BT3)

According to teachers, the teaching methods used in the private school and the public school were slightly different. The public school's students were encouraged to become independent learners, while the private school's students were too dependent on their teachers. The private school teachers even had to find information for students. In practice, while there are teachers who deliver the same subject in both public and private schools, the teachers may use different teaching approaches because of the difference in students' academic capability and the requirements of the schools. This may affect the development of students' IL.

The approach that teachers use to instruct their students in seeking information might affect their students' IL.

> *For example, if they ask me about the English dictionary, I just tell them the online dictionary that I often use, such as Oxford…I just tell them to access websites that I know.* (CT3)

> *For example, I simply introduce prestigious websites, such as Violet, to my students.* (BT2)

It can be seen that teachers preferred to introduce information sources that they often themselves used to students rather than providing their students with IL instructions to help their students become independent information seekers. This approach might make students lose the capability of self-learning, self-seeking and self-evaluation.

5.3.2.2.4. Study environment

It was found that the study environment may have an impact on students' IL. The research reveals that students had an understanding of ethics in using information. Nonetheless, they did not obey ethical guidelines in practice. According to teachers, this can be explained by the study environment.

> *The fact is that none of us experience student life without using photocopies from books…I think, in Vietnam, less than two out of ten adults obey the copyright laws, so students can make the same mistake.* (BT3)

> *Not only students, Vietnamese in general pay little attention to the ethical issues in using information. For example, we often make photocopies from books. This means we do not obey the copyright laws. Therefore, students can do the same thing.* (CT3)

It can be seen that the students were living and studying in an environment where the ethical use of information had not received great attention from information users. Copyright infringement has emerged as a notable issue in Vietnamese society. Therefore, although students had an understanding of the copyright laws and ethical issues, they were not asked to follow them. Students might be in the habit of aping the grown-ups. As a result, students made mistakes in using information. Take using photocopies as an example, the teachers pointed out that the use of photocopies was very common. Consequently, although students knew that they were not allowed to make photocopies from books, they still used them.

5.3.2.2.5. Technology use

Although several reasons are given to explain students' IL scores, evidence suggests that the use of technology has no impact on students' IL capability.

I studied in a private school, so I know that private schools' students have to pay a lot of money, so they have more chances to use technology devices to find information than public schools' students. (BT1)

I think the infrastructure of public schools is not as good as my school. My school's students are equipped with good facilities to support their learning. (CT1)

According to teachers, the private school' students were equipped with better technology devices to engage with information, both at home and at school, than their peers in the public school because of their economic conditions and school infrastructure. This might suggest that the IL level of the private school students was better than the public school students. However, the IL assessment found that the IL level of the private school students was not as good as their peers in the public school. Therefore, it can be assumed that the use of technology may not have an impact on the IL development of students in the two schools.

One of the teachers believed that owing technology devices might have a negative impact on students' IL.

Students easily access information, so they cursorily evaluate information. (BT2)

According to the above teacher, students can easily access information when owing technology devices. However, the easier students access information, the less carefully they evaluate it.

Despite the evidence, the popular belief that technology significantly affects students' IL still persists. This is demonstrated by a statement provided by a school administrator, as follows:

It depends on students' family economy. Not all families have the Internet and computers. Some families even do not allow their children to use the computer even though they have it. How can students develop their IL in that case? (BM)

It can be seen that the above administrator believed students' IL could be developed through the use of computers and the Internet. In other words, technology has a positive impact on the development of students' IL.

5.3.3. Teaching information literacy

5.3.3.1. Lack of information literacy programmes

- **Lack of information literacy programmes from the schools**

All the interviewees, including students and professionals, agreed that the schools had not delivered any formal IL programme. This could result in students' IL self-learning, as presented above (Section 5.3.2.1.3).

> *The school does not teach me anything regarding IL. Subject groups sometimes provide some information to students, but they do not instruct in how to search for information, evaluate or use it.* (BS74)

> *The school does not have any programme that can help me develop the ability to find, evaluate and use information.* (CS91)

> *To be honest, we do not have any specific instructions related to IL.* (CT3)

> *My school's students have not been taught anything related to IL, so they mainly explore themselves.* (BT1)

It can be seen that the two schools had not provided their students with any instructions regarding IL in general and the four IL components in particular. The schools had academic groups that were operated under the lead of subject teachers who took responsibility for assisting students in learning. Therefore, it was expected that students could be given IL instructions by these academic groups. Nevertheless, according to students, academic groups mainly concentrated on providing more information to students. They did not teach students IL skills. It seems teaching IL has not been given great attention by the two schools.

- ***Lack of support from the library***

It was expected that the library delivered IL instructions to students through their activities, such as library introduction class and information services. However, according to students, it seems this was not the case in practice.

From the beginning of this academic year until now, my school library has had only one activity, that was writing an essay about women. I've not seen any other activities besides that one. (BS74)

Librarians in the two schools also indicated that:

If students want to find a book and ask me, I will find it for them. That's all…This is a traditional library. We mainly deliver a loan and return service. We also have no instructions related to IL. (BL)

My library does not give students IL instructions. (CL)

It appears that the libraries in the two schools still performed the function of a traditional library. They primarily stored documents/materials and did not provide any service except loan and return. They had not made any move to assist students in developing IL.

- ***Teachers' individual information literacy instructions***

Although the schools and the library did not provide students with any formal IL programme, students could receive individual instructions from their teachers.

I sometimes give my students instructions related to seeking information. (BM)

I give students instructions regarding finding information in some cases, but not many. (CT3)

It can be seen that students sometimes could receive instructions concerning IL from their teachers in the class. However, it seems teachers mainly concentrated on finding information rather than evaluating and using it.

5.3.3.2. Reasons for lack of information literacy programmes

The study found that there were four main reasons resulting in the absence of IL programmes, including time pressure, teaching method, resource issues and students.

5.3.3.2.1. Time pressure

It was found that time pressure resulted from two principal reasons, private class attendance and strict learning timetable.

- **Strict learning timetable**: all students who took part in the interviews agreed that a busy learning schedule significantly affected delivering IL programmes and the development of students' IL.

  Besides the official classes, we also have extra classes in Maths, Physics and Chemistry on Monday, Wednesday and Friday every week. I also have to attend special subject classes[44] *on Thursday afternoon. I spend too much time studying.* (BS55)

  I do not think we have time for IL because we devote all the time at school to study…I have to study from Monday to Saturday. (CS91)

Students indicated that they had to spend a lot of time at school. They had only one day off per week. As presented in the context of the study chapter, many schools have applied the full day schooling policy in recent years. They have organised extra classes at school in addition to the official ones to improve students' learning results. Accordingly, other activities might be fallen by the wayside.

- ***Private class attendance***: the research found that the majority of students attended private classes in addition to the official study curriculum at school.

  I have to study in the school from the morning until afternoon, and I also have private evening classes two days every week. (CS28)

  We also attend private classes in different places. (BS55)

It can be seen that students spent a great deal of time in private classes that were often organised in the evening. This might occupy too much time to allow for other activities. It

[44] Special subject classes aim to develop students' talent, such as dance, singing and drawing.

seems private class attendance was so important to students that they persistently refused to get involved in other activities, as one of the students stated:

> *I think that if you provide an IL course to students, they will give time for private classes rather than the IL course.* (BS74)

Although the above student highly appreciated the importance of IL to learning success, as mentioned in the previous sections, she was not willing to take part in activities that could help her develop IL capability. She still gave priority to private classes.

The students' viewpoint, as explained above, was supported by the professionals. They confirmed that time pressure significantly affected the implementation of IL instructions.

> *Students are at school from the morning to afternoon every day. They also do not have much spare time at school to find information or do anything like that. We have only 45 minutes for each lesson, of which 10 to 15 minutes are used for reciting the previous lesson and around 30 minutes are used to teach the new lesson. We do not have the spare time to add any other activities.* (BM)

> *If you want to learn something, you need to have spare time. However, at present, students' learning timetable is full. They are too busy with subjects and private classes from the morning to evening. There is no time to add such activities.* (BT1)

> *Students now have to study too much. They have to study at school to satisfy the requirements of the study programme and they then have to attend private classes.* (CM)

The professionals indicated that the schools did not have the time to deliver activities/programmes outside of the official classes. In addition, students did not have the time to engage with information beyond their lessons. Thus, the implementation of IL initiatives might face many challenges in terms of time.

5.3.3.2.2. Teaching method

- **The current transmission approach to teaching and learning**

The study found that the current transmission approach to teaching and learning not only affected students' IL level, as presented above (Section 5.3.2.2.3), but it also resulted in the absence of IL instructions. Students said:

> *I think the current teaching method that mainly focuses on memorising information does not require us to develop IL skills. My teachers prepare everything in advance. Therefore, they may think they do not need to teach us such skills.* (CS28)

> *Textbooks are very important to high school students because they help us get the highest score. Teachers also tell us that we should not trust information beyond textbooks.* (BS74)

Students indicated that the schools still used the traditional teaching method that encourages students to memorise what has been taught by teachers instead of seeking information beyond textbooks. As a result, the need to develop IL skills and IL initiatives that can assist them in seeking information is ignored. This view was supported by the professionals, as below.

> *At upper secondary education level, students are mainly tested on what they have been taught. This means they can get high scores by memorising what has been taught by teachers. IL is not helpful in this case so we do not need to teach IL to students. However, it is needed at HE level.* (BT1)

> *At present, teachers are substitutes for many things, even the library…What students learn is limited in the textbooks. Finding information outside of the textbook is not necessary.* (CM)

> *Teachers take responsibility to find information for students. I think, to date, we still use the traditional teaching method whereby teachers provide knowledge to students.* (CT3)

It appears that the schools still gave priority to the teacher-centred teaching method. Specifically, teachers took responsibility to find information and provide knowledge to students. Students were not encouraged to engage with information and construct their own

knowledge. Accordingly, there was no need to develop students' IL skills or IL programmes.

- ***Traditional learning outcome assessment method***[45]

The study also found that learning outcome assessment method might result in a lack of IL programmes in the schools.

> *If the MOET changes the form of examinations, teachers will change the teaching method. Although they ask teachers to change the teaching method, they still assess students using the traditional learning assessment method.* (CT3)

> *Students are now experiencing exam stress and pressure, especially the traditional learning assessment method.* (CM)

> *Teachers mainly give exam questions related to what they have taught. They will be questioned if they give exam questions beyond what they have taught. Therefore, we still use the old learning assessment method.* (BT1)

It can be seen that, although the schools made an attempt to switch to a new teaching and learning method, they primarily used the traditional approach to assess students' learning, which encourages memorising what has been taught. Thus, the development of IL programmes might not be promoted to improve and enhance students' IL.

5.3.3.2.3. Resource issues

The study found that the schools faced many challenges regarding human resources and financial issues, and these factors greatly affected teaching IL in the schools.

- **Human resources**
  - ***Lack of information literacy capability/professional capability***: the study indicates that the weakness of teachers' IL capability could be considered a reason for the lack of IL instructions. Students said:

[45] By learning outcome assessment method, this thesis means the format of the test which is used to evaluate students' learning in subjects and the way that teachers give marks.

Some teachers do not know how to find information on the Internet. They do not even know whether the information is true. (BS10)

Some teachers are not good at IL. Therefore, if we ask them to provide students with IL instructions, I am afraid that it is a little bit difficult for them. (CS28)

Students thought that some teachers in their school were not good at IL. For example, some teachers could not find information on the Internet. Thus, teachers could not deliver IL instructions to their students as expected. This finding is supported by the professionals, who all agreed that teachers did not have good performance in IL.

Teachers are not all good at such skills, so it is difficult for them to give IL instructions. (CT2)

Young teachers can use computers and email. However, for older teachers[46]*, some do not even know how to send an email. Therefore, never ask them to do anything like searching for information or to give such instructions to students.* (BT2)

My school has young teachers, but the proportion is not high, most of them are old. Older teachers are more familiar with the traditional teaching method and their understanding of IL is limited. (BL)

The interviewees indicated that teachers did not have a well-developed IL level. The schools still held a large number of teachers who were not familiar with technology and the new teaching method. For example, some of them did not even know how to use computers. Therefore, they might not be good at engaging with online information systems that students were interested in, as presented above (Section 5.3.1.1). As a result, they might not be able to provide students with appropriate IL instructions.

[46] Vietnam has just started using the Internet since 1997 and the educational reform has been implemented from the early 21st century. By older teacher, the participants might imply teachers who were not formally trained in new teaching methods and computer skills in their teacher education programmes/courses.

It was expected that librarians could deliver IL instructions to students. However, it seems this was not the case. This is demonstrated by a lack of faith in librarians.

> *I am not sure whether librarians can teach us IL or not.* (BS10 and BS55)

In practice, librarians are well placed to introduce the IL concept and give students IL instructions in addition to teachers. However, students did not know whether librarians could teach them IL. This might be caused by a lack of experience related to IL teaching in the library.

The librarians acknowledged that librarians' professional capability was one of the reasons leading to the absence of IL programmes.

> *The majority of school librarians do not have a professional qualification for librarians. Therefore, they do not have much understanding of IL.* (CL)

> *Four out of five librarians in my school library do not have a professional qualification for librarians. They cannot even organise the book repository, so how can they provide students with IL instructions?* (BL)

The librarians indicated that many school librarians had no professional qualifications for their job. The context of the study chapter also shows that older teachers, or those who cannot do teaching, will be moved to work in the library. Therefore, they do not even know how to organise their library's information resources. As a result, they might face many challenges in delivering IL instructions to students.

- ***Lack of awareness of the importance of information literacy***: the awareness of IL among professionals was also considered a reason for a lack of IL instructions. According to one of the students, her teacher did not greatly appreciate the importance of IL to students.

  > *My civic education teacher only briefly mentioned the copyright laws; he might think that students do not need to know about them.* (BS55)

According to the above student, her teacher did not provide students with a more in-depth understanding of the copyright laws that could be helpful in using information effectively. Similarly, one of the teachers reinforced this finding when she indicated that teachers' awareness of IL could affect the implementation of IL initiatives.

> *I only started to think about this issue while I was talking with you. Students actually need such instructions to be better in finding, evaluating and using information. They should not engage with information in a vague way anymore.* (BT2)

The above statement shows that the teacher was not aware of the importance of IL to students' learning before she took part in the study. Therefore, she did not pay much attention to providing her students with IL instructions.

The study found that school administrators' awareness of the importance of IL also has a significant impact on developing IL programmes. They are responsible for teaching policy in the school. However, according to the students, there was a lack of awareness of IL among school administrators.

> *My school administrators may not think that IL is important and they also do not know much about IL, because it is new to them.* (BS10)

> *From my observation, my school does not promote teaching IL. They may think that students already know about IL, so there is no longer any need to implement IL programmes.* (BS74)

The students thought that IL might be a new concept to administrators. Therefore, they might not have a great awareness of the importance of IL to students' learning. They might think that the school did not need to deliver IL instructions and students should teach themselves such skills. As a result, teaching IL has not received much attention from administrators.

The students' viewpoint was confirmed by the librarians who believed that the absence of IL instructions was due to a lack of support from school administrators.

We have not provided any library introduction class in this academic year, because the board of rectors has not given us permission to organise such classes. In practice, they think that the library is not important, although they do not say that. For example, they are always asking us to develop a digital library, but they do not know what a digital library is. (BL)

My current rector does not pay much attention to the library. He thinks that the library is simply a place to store books. It does not need library management software or database, etc. (CL)

The librarians pointed out that their school administrators did not thoroughly appreciate the importance of the library to teaching and learning activities. Consequently, the library did not receive much support from administrators in the development of information sources and infrastructure or in organising activities that could assist students in developing IL capability.

The professionals' awareness of the IL concept was also explored in the interviews. The research found that most of the professionals had not heard about the IL concept before participating in the study, except the two librarians. According to the administrators and teachers, they only knew about the term for the first time when they took part in the study.

I had not heard about the term IL before. (BT2)

As for IL or IL skills, I have never used the terms before. (CT3)

I know the term "information" or "IT", but I have never heard about "IL". (CM)

It is not surprising to find that the IL concept was new to most of the professionals as the researcher predicted this result before conducting the study. It is assumed that the term IL can be understood and interpreted in different ways. Therefore, the professionals might explain IL in a different manner. However, the above finding shows that IL has not been widespread in the educational community in the schools under the common term "IL".

The professionals' perception of the IL concept was then investigated, although most of them had not heard about the term. The study found that the professionals did not have a

comprehensive understanding of the term, including the two librarians who had heard about the notion before. Some of the professionals' explanations of the IL concept are presented as follows.

> *IL is a method of finding information based on known information. Generally, IL is something relevant to information that individuals need to know based on known information.* (BT3)

> *I think IL is retrieving information from the Internet, and then identifying and selecting information that is appropriate to what we are looking for.* (CT1)

> *IL is gathering information to satisfy individuals' needs.* (CL)

Generally, although the above professionals did not provide any full explanation of the IL concept, their statements show that they did have an understanding of the term. The above professionals indicated that IL mainly focuses on information engagement activities to retrieve appropriate information in order to satisfy individuals' information needs, in which finding information was clearly addressed.

Meanwhile, some of the professionals understood the term in a different way, as below.

> *IL is information that individuals identify from the world around them.* (CT2)

> *IL is a noun that indicates a kind of knowledge.* (BT1)

It can be seen that the above professionals thought IL is information or knowledge in general. It is interesting to find that the students and professionals understood IL in the same way (see Section 5.2.3. for an analysis of students' conception of IL). It was expected that the professionals might have a better understanding of IL than their students. Nevertheless, the study found that the conception of IL between the professionals and students had some similarities. For example, they both viewed IL as knowledge.

The professionals' awareness of the role of IL to students' learning success was then examined in the interviews. It was found that, although they acknowledged the need for IL, they denied the significance of IL to school students' learning success.

> *At upper secondary education level, students are mainly tested on what they have been taught. This means they can get high scores by memorising what has been taught by teachers. IL is not helpful in this case, so we do not need to teach IL to students. However, it is needed at HE level.* (BT1)

> *I do not think IL significantly affects students' learning. Students who take more effort to explore information can have a better understanding of issues than those who do not do that. However, it does not help students achieve good learning results.* (BT2)

The professionals acknowledged the need for IL, because they believed that IL assisted students in obtaining a more in-depth understanding of issues. Nevertheless, they did not greatly appreciate the importance of IL to students' learning success, because they felt students could achieve high scores in learning without IL. This might result from the existence of the transmission approach in teaching and learning, as explained above (Section 5.3.3.2.2).

Although the teachers pointed out that IL did not have a significant impact on students' learning, they all agreed that IL was essential for their teaching activities.

> *IL is definitely necessary to me. I can find information beyond the textbooks to pass on to students.* (CT2)

> *I mainly use it for my teaching activities, such as lesson preparation, presentation design, and so on.* (CT3)

The teachers acknowledged that IL equips them with the necessary skills to engage with information, for example, finding information beyond the textbooks. This helped them have a well-prepared lesson plan.

- ***Lack of collaboration***: the study found that a lack of collaboration between the schools' professionals might bring many disadvantages for the development of IL programmes. One of the students said:

  I think teaching IL requires the collaboration of many people. However, it seems the collaboration in my school is not good. (CS28)

The above student believed that the absence of IL instructions might result from a lack of collaboration between stakeholders in her school. This opinion is supported by the professionals.

Teachers do not think about how the library can support them. (BL)

When I need help from other teachers, most of them refuse me. If I want to help my students, I will do it alone…The board of rectors also asks us to apply the project-based teaching method. However, they do not support us to do it. (CT1)

So far, the library and subject groups have not collaborated with one another. (CM)

It can be seen that there was a lack of collaboration between administrators, librarians and teachers in the schools. Specifically, teachers did not greatly appreciate the role of the library to their teaching. Therefore, neither collaborated with the other. Meanwhile, teachers did not receive much support from their school administrators in order to implement teaching activities as effectively as expected. At the same time, mutual support among teachers remained weak.

❖ **Financial issues**

It was found that the absence of IL initiatives resulted from financial issues, such as low salary and a lack of information sources.

- ***Low salary***: one of the administrators believed that teachers' salary could significantly affect delivering IL instructions, as below.

Some teachers persistently refused me when I asked them to do something in the school. They told me that they were too busy with their private classes and why was I forcing them to do such things when their salary was not high. Actually, a young teacher's salary is around 3 million Vietnamese Dong (VND) per month[47]. (BM)

The above statement indicates that low salary for teachers could result in a decrease in their motivation to perform well at school. Accordingly, in general, they were not willing to provide students with extra activities that could support students' learning. Similarly, the low salary for school librarians might not motivate them at work, as one said:

School librarians' salary is not high, so we do not want to deliver many activities on such an income. Based on the school library assessment criteria, they mainly focus on factors, such as the number of books, computers and book exhibition activities. They do not have criteria related to IL, so why should I have to do it. (BL)

The above librarian indicated that the low salary decreased her motivation at work. She primarily focused on the library's main tasks, such as basic services and book exhibitions, rather than making any attempt to provide extra activities to students that could help them develop their IL.

However, School C's professionals did not share any experience and statements regarding salary in the interviews.

- ***Lack of information sources***: the study found that a limited budget could significantly affect purchasing materials/documents for the library. The professionals indicated that a lack of information sources might cause many challenges to delivering IL instructions.

  My school library receives around 10 million VND per year[48]*. It is not enough to purchase new books for students.* (BL)

[47] 3 million VND equal around 100 British Pound.

[48] 10 million VND equal around 330 British Pound.

We would give students instructions related to IL if my school library was a digital library. We would have more reliable books and information sources to help students find information. At present, we do not need to teach them such skills because they can find books in the library easily. Also, it is very costly to develop a digital library. (BM)

It can be seen that the above library was facing a lack of information sources. They did not have adequate budgets to develop the information sources that could be used for teaching and learning activities. Therefore, they thought there was no need to implement IL instructions.

5.3.3.2.4. Students

The study found that the absence of IL instructions also resulted from students themselves, in particular their awareness of the importance of IL to their learning, as noted by the librarian in the private school:

As from this year, my school library will no longer organise a library introduction class because students refuse to go to the class. Students who want to read books can borrow books in the library. (CL)

As explained above (Section 5.3.2.1.1 and 5.3.2.1.3), there were students who had never used the library. Furthermore, there were students whose awareness of the importance of IL to their own learning remained low. Thus, the development of skills related to IL did not get much attention from them. As a result, they were unwilling to involve in activities that could develop their IL, for example, the library's activities. As such, the library was not motivated to organise such activities anymore.

5.3.4. Suggestions of participants for delivering an information literacy programme in schools

The interviewees came up with some suggestions for the development of an IL programme in schools. Their recommendations will be used to establish suggestions for practitioners in the implementation of an IL initiative that will be presented in the conclusion chapter. Their recommendations mainly concentrate on four issues: who should teach IL, how to teach IL, a national IL policy and improving school library.

5.3.4.1. Who should teach information literacy

The interviewees all agreed that teachers should mainly take responsibility for delivering IL instructions.

> *I think that teachers should teach IL.* (CS28)

> *It will be more effective if teachers directly provide IL instructions to students.* (CM)

In practice, the implementation of IL programmes requires the collaboration of stakeholders. However, the interviewees stressed the role of teachers in delivering IL instructions.

The interviewees suggested that teachers need to improve their knowledge of IL in order to deliver IL instructions more effectively.

> *If teachers want to teach something like IL, they have to be equipped with adequate knowledge about it.* (BS74)

> *We should have IL training courses for teachers, because we cannot give students IL instructions when teachers have no knowledge about it. Furthermore, there is a need to invite experts in this field to give teachers and students instructions related to IL.* (BT1)

> *We should provide IL training to teachers in order to help them have an understanding of IL.* (CL)

Providing IL training courses for teachers is necessary to provide them with a more in-depth understanding of IL. As the concept of IL is relatively new to teachers, one of the interviewees suggested that the support of IL experts is necessary.

The professionals also recommended that librarians' IL capability and knowledge need to be improved.

We have to improve librarians' IL capability. They should be taught something related to IL. (BL)

Improving librarians' IL capability is needed. (CM)

Also, the professionals suggested that there is a need to promote a collaboration between stakeholders, including school administrators, librarians, teachers and students.

We need a connection between teachers, librarians and school managers. The library needs to support teaching activities and teachers have to work with each other. (CM)

School managers, teachers and librarians need to work with each other to develop an IL programme effectively. Students also need to be involved in this. (CT3)

5.3.4.2. How to teach information literacy

5.3.4.2.1. Promoting project-based learning

The schools are in the process of replacing the transmission teaching method by a new active teaching method called project-based teaching approach. The interviewees stressed that the implementation of project-based teaching approach should be promoted.

The school should require students to conduct projects. Let students raise their voice much more than teachers. This will help students develop their own knowledge. (BS10)

The new teaching and learning method that focuses on the project-based learning requires students to engage with information. Therefore, if you want to develop students' IL, you should pay more attention to that teaching and learning method. (BL)

The interviewees believed that promoting the project-based learning is necessary, because it encourages students to engage with information. Accordingly, students will develop skills that are needed for the information engagement process.

5.3.4.2.2. Changing learning outcome assessment method

The professionals suggested that the learning outcome assessment method should be changed to make it suit the new teaching and learning method.

> *If the MOET replaces the current learning outcome assessment method by a new one, students will make more effort to engage with information.* (CM)

> *IL can only be developed if the learning outcome assessment method changes.* (BT2)

The existence of the traditional learning assessment approach that mainly focuses on rote learning may not promote the development of IL, as explained above (Section 5.3.3.2.2). Thus, the replacement of the old learning method by an appropriate learning assessment approach is essential to develop students' IL.

5.3.4.2.3. Integrating information literacy into the study programme

The interviewees also suggested that IL should be integrated into the study programme.

> *I think that integrating IL into the official study programme is needed to avoid wasting time to attend short courses.* (BS55)

> *With a very strict learning timetable, I think we should integrate IL into the subjects.* (CT1)

> *If we want to develop the new teaching and learning method, the MOET should integrate IL into the study programme.* (BM)

According to the interviewees, IL should be integrated into the formal curriculum, because it helps them save time, which is one of the challenges of the implementation of IL programmes at present.

5.3.4.2.4. Combining theory and practice

It was recommended that teaching IL should combine theory and practice.

I think that IL theory should be taught together with practice. We should not mainly focus on theory. (CS51)

We should let students practice IL skills rather than focusing on teaching IL theory only. (CT1)

Let students practice IL skills and then check their results. (BT3)

It can be seen that the interviewees preferred a combination of teaching IL theory and practice. This means teaching IL does not simply show students what IL means, but it is necessary to encourage students to practice IL skills. This may help students develop their IL more effectively.

5.3.4.2.5. Providing an information literacy assessment

The interviewees also suggested that an IL programme should be followed by an IL assessment.

I think students need to be assessed to know whether IL teaching is effective. (CS51)

After providing IL instructions, we should have an assessment or something like that as to the effectiveness of the programme. (BT1)

The interviewees indicated that a follow-up IL assessment is necessary to make sure the programme is appropriate. Accordingly, some changes can then be made if needed.

5.3.4.3. National information literacy policy

One of the administrators suggested that the MOET should issue a national IL policy for schools in order to promote the comprehensive development of IL programmes.

The MOET needs to intervene in developing IL programmes. They need to require all schools to deliver IL programmes. They are in the process of implementing a new curriculum, but they neglect activities that are necessary to its development. (BM)

The above statement shows that the MOET needs to be involved in the development of IL programmes. They can encourage schools to develop IL initiatives through a national IL policy.

5.3.4.3.1. Improving school libraries

One of the librarians suggested that the school library should be improved to assist institutions in developing IL programmes.

> *The library should be improved and building a digital library is needed. This can support teaching IL.* (BL)

The above statement indicates that the implementation of IL initiatives can become more effective if libraries are improved. Issues surrounding information sources and infrastructure should be considered when such improvements are made.

5.3.5. Summary to Section 5.3

The interview results supported the findings of the first phase questionnaire in indicating the way that students find, evaluate and use information. The study reveals that students use a variety of techniques and tools to find and evaluate information. However, it seems they mainly employ simple techniques to find and evaluate information. Furthermore, although there is evidence that students have an understanding of ethics in using information, it seems they do not obey ethical guidelines in practice. In addition, the study demonstrates that students rarely use English to engage with information.

A range of factors that affected students' IL were explored. Specifically, students' awareness of IL, their academic capability and IL self-learning are internal factors affecting their IL level. Meanwhile, teachers' IL capability, teaching method and study environment are considered external factors affecting their IL. Nevertheless, it was found that students' IL is not influenced by technology use.

The study shows that there is an absence of IL programmes in the two schools. Time pressure, teaching method, resource issues and students' awareness of IL are regarded as reasons resulting in a lack of IL instructions in the schools. These reasons should be considered in the implementation of an IL programme.

It can be seen that there is not a great difference between the two schools regarding teaching and learning IL. A few minor differences related to students' academic capability, teaching methods and technology use were explored. Issues related to salary for teachers and librarians in the private school were not shared. However, the two schools displayed similarities in terms of students' IL capability, factors affecting students' IL, the status of IL teaching and the reasons resulting in a lack of IL programmes.

The above results were derived from the perspective of students and professionals. It was found that the IL concept was new to the participants. This raised a concern as to whether they did not recognise factors related to IL in their institutions or they missed any opportunity to develop IL programmes in their institutions. This will be answered and reinforced by the analysis results of documents issued at both national and institutional level.

5.4. Document analysis findings

5.4.1. Teaching information literacy

5.4.1.1. Lack of information literacy programmes

The documents were analysed to investigate how IL instructions were framed in the two schools in terms of developing search strategies, evaluating information sources, using information ethically and using English to engage with information. It was found that, although developing lifelong learners was integrated in the educational goals of the schools, there were no IL initiatives regarding the four above IL components.

The documents indicate that promoting lifelong learning is one of the principal objectives of Vietnam's education system in general and the two schools in particular, as follows:

> *By 2020, our country's education system will be fundamentally and comprehensively improved…ensuring social justice in education and promoting lifelong learning, and gradually forming a learning society.* (Educational Development Strategy 2010-2020)

The Educational Development Strategy 2010-2020, issued by the MOET, aims to set up educational goals and strategies for all educational levels. It shows that, by 2020, schools will need to equip their students with lifelong learning capability.

It was expected that initiatives related to IL could be involved in the strategy. However, in the Educational Development Strategy 2010-2020, the specific objectives for secondary education do not mention the development of IL that is contemplated as one of the necessary capabilities to help high school students become lifelong learners, as shown below.

> *As for upper secondary education, the quality of education is to be improved, especially cultural education, moral education, life skills, laws, foreign languages and computer science…By 2020, 80% of adults will obtain a high school qualification or equivalent, and 70% of disabled children will be able to enter schools.* (Educational Development Strategy 2010-2020)

It can be seen that, although IL is not explicitly mentioned in the specific educational objectives, the development of students' capability in terms of laws, foreign languages and computer skills is included. This may be helpful in developing students' IL. Specifically, as for laws, students may be equipped with an understanding of laws, including copyright laws. With regard to foreign languages, the ability of students to use English to engage with information may be improved. In terms of computer skills, this may provide students with the necessary skills to engage with online information systems. Nevertheless, the participants did not mention this in their answers. This raises a concern that there could be a lack of awareness of the national educational strategy among students and professionals. This might result from an inappropriate approach in delivering national educational strategies and policies.

Similarly, IL in general, and the four IL components in particular, are not mentioned in the Guidance on the Implementation of Secondary Education Tasks in the Academic Year 2014-2015. The guidance is based on the Educational Development Strategy 2010-2020. It aims to set up specific educational tasks for schools. The guidance highlights activities alongside the main programme, such as English contests, law education, anti-corruption education, sea and islands sovereignty education, and environment protection. Although the above activities might support students in developing English use capability and enhancing their knowledge of law, there were no instructions regarding applying students' English use and knowledge of law into solving information problems. Therefore, it can be said that, while a set of activities was provided to students, IL still remained unimportant.

The library reports showed activities undertaken in the previous year. It was expected that the library could assist their students in developing IL by delivering services or activities related to IL. However, the reports mainly provided information concerning statistics of materials, exhibitions, competitions and professional activities. The two libraries did not deliver activities or services that could support students in the development of IL.

An analysis of the remaining documents, including school reports, teaching resources and textbooks, found that there were no IL instructions in terms of developing search strategies, evaluating information sources, using information ethically or using English to engage with information. The above documents mainly focused on what students needed to achieve concerning knowledge, skills and attitudes after completing the study programme

in general and the lessons in particular. None of them showed the existence of IL in general and its components in particular.

5.4.1.2. Reasons for lack of information literacy programmes

5.4.1.2.1. Time pressure

An analysis of documents found that time pressure might result in the absence of IL programmes.

> *Extra classes are organised for students…At present, 100% of the school's teachers are licensed and properly regulated to organise private classes.* (School B's report)

> *The school has organised two classes (morning and afternoon) every day for students.* (School C's report)

It can be seen that private classes were formally organised under the control of the School B. All teachers were allowed to organise private classes at home. Furthermore, the two schools also applied the full day schooling policy.

5.4.1.2.2. Teaching method

❖ **The current transmission approach to teaching and learning**

An analysis of documents found that the transmission approach to teaching and learning was still applied in the education system in general and the two schools in particular. Specifically, the Educational Development Strategy 2010-2020 highlights that teaching methods are shortcoming of the educational system in Vietnam.

> *The study programme, teaching and learning method, examinations, assessment and evaluation are slowly improving…Teaching methods are behind the times.* (Educational Development Strategy 2010-2020)

It can be seen that there was a slow improvement in teaching methods, study programme and examinations. The new teaching and learning approach has not been thoroughly applied in the education system. Therefore, in the Education Strategy 2010-2020, several solutions are suggested to improve the country's education system. However, the specific

solutions are still in draft form and have not been announced officially. The changes are being made and will be officially implemented in secondary schools, as described in the strategy below.

> *Phase 2 (2016-2020): implementation of innovating general education programme.* (Educational Development Strategy 2010-2020)

The Guidance on the Implementation of Secondary Education Tasks in the Academic Year 2014-2015 shows that schools need to move to a new teaching method and this is considered the focus of the academic year 2014-2015:

> *Continue focusing on comprehensively innovating teaching methods, examinations and learning assessment methods.* (Guidance on the Implementation of Secondary Education Tasks in the Academic Year 2014-2015)

Similarly, based on the guidance, the school reports indicate that they are turning to a new teaching method:

> *The school is innovating teaching and assessment methods based on appropriate standards of knowledge and skills.* (School B's report)

> *The student-centred teaching method is being implemented in the school.* (School C's report)

It can be seen that the two schools are in the process of innovating teaching methods. However, the analysis of the guidance and school reports found that they could not provide any evidence on how they had changed, results or the reality of the transformation. They mainly provided information concerning infrastructure, students and teaching staff statistics, and the results of extra-curricular activities.

Textbooks are considered students' main learning resource. It was expected that they could assist students in approaching the new teaching method and developing IL skills. However, the analysis of the textbooks found that the textbook design did not support students in developing IL. Lessons are divided into five sections, including aims, main content, lesson

preparation questions, summary and exercises. However, the lesson aims do not mention developing IL capability. Furthermore, questions and exercises mainly ask students to recall information from the main content. They do not encourage students to engage with information outside of the textbooks. They sometimes provide questions that require students to explore further, for example: find more folk love songs. Nevertheless, they do not provide any instruction on how to do the tasks. In particular, there are advanced questions for highly qualified students only that are marked by "*". Based on what has been explained above, it can be assumed that the textbooks still mainly rely greatly on the transmission approach in teaching that does not promote lifelong learning in general and IL in particular.

In terms of teachers' resources, the study programme, lesson plans and teacher textbooks are considered a main teaching resource that teachers use to organise their classes. The lesson plans are divided into two parts, including the main content and the activities of the teachers and students. The lesson plans were analysed to find instructions that could help students develop their IL. The study found that the transmission teaching approach was mainly used and there was an absence of IL instructions.

Instructions for students to prepare for the next lesson:

- *Memorise today's lesson*
- *Take a look at the exercises*
- *Read the next lesson: "Vietnam's folklore".* (Lesson plan – School C)

And

Activity 4: instruct students how to summarise the lesson

- *Teacher: ask students to provide comments on the content of the work*
- *Students: provide comments based on the section "memos"* (Lesson plan – School B)

It can be seen that rote learning was still used. Students were encouraged to memorise information rather than explore information outside the lessons. This approach does not motivate students to develop the necessary skills to engage with information.

The study found that, although a number of new teaching methods (group discussion, problem solving and projects) were mentioned in the study programme and lesson plans,

they were not fully and successfully implemented. For example, although teachers ask students to do group projects, they mainly encourage students to use textbooks.

> *Teaching and learning resources:*
> *Teacher: lesson plan, textbook and examples outside of the textbook*
> *Students: the textbook* (Lesson plan - School B)

And

> *Learn about the work 'Stars'*

- *Teacher: ask students to read the work and prepare for group presentation*
- *Students: read the work and prepare the presentation*
- *Teacher: give comments and instruct students based on the textbook* (Lesson plan – School C)

It can be seen that students were not required to engage with information outside of the textbooks. This might decrease students' motivation in developing skills to engage with information. Although group discussion and project work are considered a new teaching approach that assists students in developing independent thinking, students' discussions are mainly dependent on the textbooks rather than engaging with information outside of the textbooks.

Similarly, it was expected that the teacher textbooks could provide teaching staff with instructions on developing students' IL. However, this was not the case. In the teacher textbooks, each lesson is divided into two parts, including aims and notices that teachers have to memorise. The notice section contains lesson content, teaching method and exercises. It was found that the textbooks mainly asked teachers to engage with information rather than instructing them how to help students interact with information. An example can be found below.

> *As for teaching method, for this kind of lesson, teachers need to make more effort to find specific information for students.* (Teacher textbook)

The above example indicates that teachers are required to find information for their students. This approach might not be appropriate to motivate students to engage with information.

❖ **Learning outcome assessment method**

The document analysis found that the traditional learning outcome assessment method, which highly encourages students to memorise and recall information, is still employed in schools. Accordingly, students might not be motivated to develop IL skills.

> *The study programme, teaching and learning method, examinations, assessment and evaluation are slowly improving.* (Educational Development Strategy 2010-2020)

The strategy indicates that the examinations and assessment approach slowly improves. This may affect the implementation of the new teaching and learning method, because the study programme needs to ensure consistency between teaching method and learning assessment.

The analysis of teaching resources indicates that, although several learning outcome assessment methods are employed, traditional assessment methods are still mainly used, as explained in the following example:

> *Examine the previous lesson: recite the work "Summer Landscape"* (Lesson plan – School C)

> *Examine the previous lesson: recite the poem "Thu Dieu"* (Lesson plan – School B)

In Vietnam's schools, before starting a new lesson, teachers usually provide a 10-15 minute test in order to examine what students have achieved from the previous lesson by randomly selecting some students in their class. The above examples indicate that it seems that teachers still prefer the traditional assessment approach of asking students to recite the work. This might not encourage students to develop the necessary skills to go beyond the lesson. Another example of using the traditional assessment method is presented below.

Scoring table:

6,7: the assignment provides enough information, is well presented and has only minor mistakes in writing

4,5: the assignment provides enough information but is not well presented and has minor mistakes in writing

2,3: the assignment does not provide enough information and has many mistakes in writing

1: the assignment provides a brief summary and does not mention significant information

0: the assignment has not been submitted or the writing was in utter confusion

(Lesson plan - School C)

It can be seen that the above scoring table mainly asks students to provide necessary information. This information might be extracted from textbooks, lessons and what teachers have taught them.

Similarly, another assignment asked students to analyse the return of the character Chi Pheo in the work of the author Nam Cao. The scoring table developed to assess students' tasks indicates that:

> *Students can present the assignment in different ways, but they have to ensure that they provide the following information and ideas.* (Lesson plan – School B)

It can be seen that the scoring table still requires students to provide information and ideas that have been taught instead of showing their own ideas or seeking more information. This assessment approach might not encourage students to develop their own thinking or engage with information.

It is interesting to find that it seems the teacher textbooks' editor group and teachers were equivocal in determining an appropriate assessment method when they moved to a new teaching method. Specifically, the teacher textbooks gave teachers instructions on the assessment method, as below.

> *Although giving scores based on the information/idea that has been taught is not encouraged, students still have to provide the full information/idea that is provided in the textbook.* (Teacher textbook)

It can be seen that the above instruction is not clear in helping teachers identify an appropriate assessment method. This might make teachers who were familiar with the old assessment method confused. As a result, they might still apply the old assessment method, which mainly focuses on rote learning.

5.4.1.2.3. Resource issues

❖ **Human resources**

The document analysis found that the professional capability of teachers and librarians might affect the development of IL. As for teachers, the Educational Development Strategy 2010-2020 and school reports pointed out that teachers had not met professional standards.

> *Teachers' professional capability has not met the requirements. They mainly concentrate on imparting theoretical knowledge to students and give little attention to developing thinking, creative capability and practical skills for students.* (Educational Development Strategy 2010-2020)

School B's report shows that:

> *Older teachers have limitations in their professional capability and they have no motivation to emulate and improve.* (School B's report)

It can be seen that teachers' professional capability was not as highly developed as expected, especially older teachers. It seems they primarily provided theoretical knowledge to students rather than giving instructions that could develop their students' higher order thinking. In other words, teachers mainly used traditional teaching methods. They did not have much experience and competence to deliver a new teaching method that equips students with the necessary capabilities to become lifelong learners.

It was found that librarians' professional competence could result in a lack of IL programmes. The school and library reports showed that the majority of the librarians were

staff who held several official positions or teachers who could not do teaching. In particular, School C's library had two librarians. One of them was a teacher who could not do teaching and one was a staff member who held two official positions. As for School B, the library had four librarians. Three out of the four were teachers who could not do teaching. Meanwhile, only one of them had a professional qualification as a school librarian. This situation might result in two consequences: firstly, librarians might not have adequate time to manage the running of the library and, secondly, they might not have professional competence to deliver library services effectively. As a result, delivering IL instructions might be affected.

- **Financial issues**
  - **Low salary**

The strategy indirectly indicates that financial issues might result in a decrease in teachers' motivation to perform well in their class.

> *Regulations and policies are still inconsistent and have not created sufficient incentive to promote the potential of teaching staff.* (Educational Development Strategy 2010-2020)

The strategy shows that the inconsistency of policies (including salary policy) might significantly affect teachers' contributions. The payment of wages was not commensurate with teaching. Therefore, teachers might not be motivated to deliver activities outside of the formal study programme.

  - **Lack of information sources**

The analysis of documents found that the libraries did not have adequate financial support for activities because of budget cuts. Specifically, the library reports indicated that a limited budget resulted in a lack of information resources. For example, each school library received financial support to acquire only 500 copies of books per year. Furthermore, the library statistics indicated that the libraries did not have electronic information resources. They mainly provided their users with paper information resources. The number of books in School B's library and School C's library was 11,683 and 2,312, respectively. They mainly acquired story books, textbooks, examination preparation books and professional books. It appears that the libraries did not hold a large quantity of books and there was an

absence of electronic information resources. Therefore, the need to provide instructions regarding IL might not arise.

Budget cuts had a negative impact on library infrastructure. Particularly, as shown in the library reports, School B's library stopped using the library software VEMIS because of budget cuts. At the same time, School B's library did not have an adequate budget to develop a digital library. In addition, restriction in the application of IT resulted in spending more time than usual to complete the library works. Similarly, School C's library showed that they stopped using the library software from the academic year 2014-2015 and delivering several services, for example, inter-library loan, due to budget cuts.

5.4.2. Summary to Section 5.4

The analysis of documents indicates that, although one of the main goals of the education system in the country in general, and the two schools in particular, is promoting lifelong learning, there was an absence of IL instructions at both institutional and national level. The causes of this status were found to include time pressure, teaching method and resource issues. This significantly reinforces the results of the previous phases.

5.5. Summary to Chapter Five

A summary of key findings from the statistical analysis can be found in the following table.

Table 22. A summary of key findings from the statistical analysis

Criteria	Key findings	Public school	Private school
Overall IL scores	IL skills had not been developed comprehensively	Low scores: 5.43% Average scores: 88.04% High scores: 6.52%	Low scores: 21.98% Average scores: 75.82% High scores: 2.2%
IL scores between schools	Students who achieve better academic results likely display a better IL level	Mean score: 52.61	Mean score: 40.18
IL scores between grades	Grade 12 students had the best-scored performance but Grade 11 had lower scores than Grade 10	Mean score: Grade 10: 52.6 Grade 11: 51 Grade 12: 53.9	Mean score: Grade 10: 37.2 Grade 11: 35.6 Grade 12: 47
IL scores between males and females	Females had better IL scores than males	Females' mean score: 52.7 Males' mean score: 52.5	Females' mean score: 41.4 Males' mean score: 39.1
IL component testing scores	Students were better in using and finding information than evaluating it	Mean score of evaluating information is 45.87 lower than the three other skills with 50.65, 52.96, and 65.49	Mean score of evaluating information is 30.77 lower than the three other skills with 35.82, 45.8, and 54.67
IL self-assessment	Students overestimated their IL	Self-rating at: Low level: 13% Average level: 59% High level: 28%	Self-rating at: Low level: 29% Average level: 46% High level: 25%
IL self-assessment between males and females	Males thought more positively of their IL level than females	Percentage of students self-rated their IL at a high level Females: 28% Males: 29%	Percentage of students self-rated their IL at a high level Females: 19% Males: 28%
IL self-assessment between grades	Students were at a higher academic level self-rated their IL more positively than those who were at a lower grade	The percentage of students rating their IL at a high level increased from 19% (Grade 10) to 29% (Grade 12). The percentage of students rating their IL at a low level declined from 16% (Grade 10) to 8.8% (Grade 12).	The percentage of students rating their IL at a high level increased from 10% (Grade 10) to 39% (Grade 12). The percentage of students rating their IL at a low level declined from 50% (Grade 10) to 13% (Grade 12).
Self-assessment between schools	Students with better academic performance thought more positively of their IL level	Percentage of students self-rated their IL at: Low level: 13% Average level: 59% High level: 28%	Percentage of students self-rated their IL at: Low level: 29% Average level: 46% High level: 25%

In sum, the combined findings of the three phases provide an insight into the practice of IL teaching and learning in the two upper secondary schools in Vietnam. As discussed in the literature review, IL is considered an indispensable component in promoting lifelong learning. Although Vietnam sets the goal of developing lifelong learners, equipping students with IL skills has not received much attention from the schools. This is demonstrated by a lack of IL initiatives. It was found that factors affecting the development of IL programmes were associated with the country's educational context, as explained in Chapter Two. Hence, it can be said that the implementation of IL programmes should be situated in a specific setting. IL initiatives cannot be delivered if contextual elements are not thoroughly solved. It is suggested that a context-based IL teaching model should be proposed for Vietnam's upper secondary schools.

CHAPTER SIX: DISCUSSION

6.1. Students' information literacy capability

6.1.1. Overall information literacy level

With an overwhelming number of students achieving average IL scores (82%), the study identified that Vietnam's upper secondary students had basic knowledge/skills about how to engage with information. As discussed in the study context chapter, there have been attempts made to improve the education system and replace the traditional delivery model of transmission by a constructivist approach to student learning. It was expected that the development of students' IL should receive great attention from educators and, therefore, students' IL could be at a high level. However, it was found that the percentage of students achieving high scores (4.4%) in the IL assessment was much lower than the proportion of average (82%) and low scoring students (13.7%). Furthermore, the mean IL score was below the expectation of 50% (mean score: 46.43/100). Evidence suggests that students' IL scores were not as high as expected. This result did not come as a surprise to the professionals, for example, *"I think this survey result is something as a matter of course. It is obviously true in reality"* (CT3). This reveals that students of the schools had not been equipped with expected IL capability. This view is shared by Venezky (2000) who demonstrated that students faced many challenges in handing information, technically-based skills and effective independent learning. Similarly, as noted in the literature review, a large number of studies conducted at different educational levels, ranged from primary to HE, found that students' IL capability was underdeveloped (J. Schacter & Dorr, 1998; Lazonder, 2000; Branch, 2003; Law & Chu, 2005; Foster, 2006; S. Chu et al., 2011). It can be seen that this problem has been well established by research in the past and it is thoroughly unresolved in the context of this research.

It is not surprising to find that females obtained higher scores than males in overall IL scores (mean score: 47.92 vs. 44.67) and the four IL testing areas, because the literature widely reports that there are gender gaps in literacy achievement across schools (Klinger et al., 2010). Females and males' scores in developing search strategies, evaluating information sources, using information ethically and using English to engage with information were 44.44 vs. 41.9, 38.99 vs. 37.62, 63.89 vs. 55.65, and 50.73 vs. 47.83, correspondingly. This result strengthens the outcomes of several studies, for instance, Hignite et al. (2009), S. Chu (2012), T. Liu and Sun (2012) and Chang et al. (2014). These projects were carried out to explore the difference between male and female students,

ranged from primary schools to HE, in their IL skills. They revealed that female students outscored their male peers in the IL tests. They suggest that breaking the imbalance between males and females in their IL level is essential to enhancing students' learning. In addition to IL, a range of research conducted by the International Association for the Evaluation of Educational Achievement (IEA) demonstrated that female students had better performance than male students in reading literacy (Wagemaker, 1996; Mullis et al., 2003; Mullis et al., 2007; Mullis et al., 2012). Building on this theme, Pickard and Dixon (2004) also observed that males and females displayed different propensities in accessing electronic information resources to serve their learning. It can be seen that, like many other countries, the disparity in the IL level between female and male students also occurred in Vietnam. The study found that there was no statistical significant difference in mean IL scores between girls and boys as well as no correlation between genders and their IL level. This is strongly evidenced in the statistical tests, with $p>0.05$ for independent sample t-test and r = -.108 for correlation coefficient test. The relationship between IL and genders was also observed by both Mohammad (2014) and S. Chu et al. (2011). Specifically, Mohammad (2014) found that there was no significant difference between male and female students concerning their IL capability when he examined students' IL skills at the Isfahan University of Medical Sciences. Also, S. Chu et al. (2011) showed that students' improvement in IL and IT skills could not be significantly predicted by their gender. It can be seen that this research and the earlier studies share the same view by pointing out that there is no statistical relationship between genders and their IL level.

Further granular analysis of the relationship between IL testing areas demonstrates that skills of the earlier stages of the process (e.g. information search) were a good prediction of skills of the later stages (e.g. information evaluation), with $r > 0$ for correlation test. In other words, this finding highlights that if students performed better at skills of the earlier stages of the information engagement process, they could have a better performance at later stage skills. The result is in the line with earlier literature when Chang et al. (2012) confirmed that skills of the earlier stages of IB, such as task definition, information seeking strategies, and location and access, had a positive impact on skills in the later stages. Similarly, in this research, students might achieve better scores in evaluating information if they performed well in developing search strategies.

6.1.2. Information search

It was found that the students mainly used simple search techniques, such as call number and keywords, rather than advanced search features, for example, Boolean and truncation. This is evidenced by the student interview results, *"for example, in my school library, history books are classified based on major periods of history. If I want to find information about a certain period, I just go to those bookshelves…I also search for information on the Internet using keywords"* (BS74). It can be said that students were primarily in favour of using simple search techniques, preferring not to engage in more complex searching to satisfy their need. This view is shared by UNESCO which indicates that searchers make little effort in seeking information and this is considered "the most solid result in all of information seeking research" (UNESCO, 2013a). Similarly, Ojala (2002) found that advanced search features were only used by around 3-5% of searchers. Students primarily search for information on the Internet using one word and they only string words when they cannot find what they want (Seamans, 2002). Furthermore, the studies conducted by Spink, Wolfram, Jansen, and Saracevic (2001), Seamans (2002) and Hepworth (2003) demonstrated that searchers did not prefer to use Boolean operators. This finding is consolidated by Majid et al. (2011) who found that nurses principally used basic search features to search for literature and only one-quarter of them utilised Boolean and proximity operators. Searchers meet many challenges in generating the most appropriate keywords as "concept determination and selection of terms to represent them is not always a straightforward task" (Large et al., 2008, p. 127). In addition, students are faced with challenges in identifying sources, broadening and narrowing the search, and they display a propensity of using a new source if they fail in finding information rather than modifying their current search (Hepworth, 2003). In this research, students did not achieve high scores regarding broadening search results (mean score: 32.8), narrowing search results (mean score: 47.5) and using truncation (mean score: 35.5). As noted in the literature review, searchers are inclined to develop a new search using their past experience of successful searching (Head & Eisenberg, 2009; Pickard et al., 2011). It can be seen that this research firmly consolidates the results of many earlier studies by indicating the overuse of simple search techniques among Vietnamese students. It is argued that this may prevent students from developing effective searches (University College London, 2008). In this research, search skill was not the least-scored skill, however, students achieved lower scores of the ability to develop search strategies (mean score: 43.28) in comparison with the two other skills, using information ethically (mean score: 60.11) and using English to engage with information effectively (mean score: 49.40). Students even

obtained low scores for some search items, for example, Boolean operators (mean score: 20.8).

The study found that school students preferred to use online search engines, especially Google, rather than other search tools, for example, the library catalogue. 72.1% of the students chose to start their search by using Internet search engines, for example, Google, rather than other search tools. This result is consolidated by previous research which identifies that the first choice search engine for most students in particular and searchers in general, is Google (OCLC, 2003; Fallows, 2005; Godwin, 2006; Sonley et al., 2007; Head & Eisenberg, 2009; Herring, 2009; Pickard et al., 2011; Sokoloff, 2012). In addition to Google, users also give priority to Yahoo (S. Chu et al., 2011), social media channels and social networking sites for breaking news and expert opinion (Sokoloff, 2012). Similarly, several studies conducted in Hong Kong and Denmark found that children mainly searched for information on the Internet (Andersen et al., 2007; D. Chu et al., 2012). Vietnamese students were not out of this trend when they also gave priority to searching information through Google.

It was found that a lack of patience could result in the superficial use of online search engines, especially Google, in employing simple search techniques, as said by one of the librarian, *"students can obtain many search results using Google. However, take using online catalogues as an example, if they type a wrong keyword into the search box or if there is something wrong with the software, it may not provide any suggestion or result. This causes students to lose patience. As for online search engines, they provide many results, suggestions and everything related to what students are looking for. Therefore, students prefer to use these"* (BL). This finding supports the work of Griffiths and Brophy (2005) who confirm that many students mainly want to use information rather than spend time looking for it. The overuse of Google could result from its convenience, speed, habit and ease of information access (Duffy et al., 2010). Students can seek the answers for what they are looking for easily (Godwin, 2006). In the context of this research, one more reason which resulted in the above problem was students were taught to do that. Teachers primarily provided their students with instructions related to using Google and keywords to find information. For example, one of the teachers said that: "*I just give them very vague instructions. For example, using a keyword like "water sport" to search for information on the Internet. I do not know how to instruct them to find information correctly. I mainly*

recommend they use Google" (CT3). Along with the development of IT, "the Internet is widely used" (M. Smith & Hepworth, 2007, p. 9); and children nowadays have many opportunities to use computers at an early age (Calvert et al., 2005; Shenton et al., 2014). There is a widespread belief that the rapid development of IT and the overuse of technology devices can lead children and young adults to problems (Shenton et al., 2014). This could result in the increase of using web-sources, such as search engines and databases, instead of using printed sources to find information, as explained above (Lombardo & Miree, 2003; Large et al., 2008; S. Chu et al., 2011; Qayyum & Williamson, 2014). Based on the results of this study and the literature, it can be seen that the superficial use of online search engines could result from students' lack of patience, teachers' search behaviour and the development of IT.

No one can deny that Google is a useful tool in finding information, although the use of Google requires students to have the necessary skills that enable them to find and evaluate appropriate information. The superficial use of Google may reduce the effort of seeking information through other search tools among students, even though those search tools can provide students with high quality information. For example, library websites/OPAC are less used by searchers in comparison with Google or other online search engines (OCLC, 2003; S. Chu et al., 2011; Pickard et al., 2011). Similarly, Vietnamese students were not interested in using the library classification system to find materials/information and reading books, as said by one of the teachers: *"they do not like reading books and newspapers. They prefer to use computers and they think they can Google everything"* (CT3). This may result in a limited understanding of how information is organised and retrieved in libraries by students (Pickard et al., 2011). Also, they do not know how to "refine searches or where to look for information that Google does not point to, such as paid-for sources that provide indexed and verified databases covering a wide range of industries" (De Saulles, 2007, p. 76). At the same time, the overuse of Google may result in the underdevelopment of students' IL skills (R. Anderson, 2005) and poor academic research results (Buschman & Warner, 2005). This is strongly evidenced in the context of this study by indicating that there was a lack of IL capability among students, with only 4.4% of the students achieving high scores in the IL assessment.

In order to solve the above problem, earlier research suggests that searchers need to have a basic understanding of the information system (Callicott & Vaughn, 2005; Wleklinski,

2005), and students' Google search skills need to be improved in order to develop effective searches (R. Anderson, 2005). Additionally, it is essential to deliver IL interventions to assist students in engaging with electronic sources effectively (Thompson, 2003; Kenney, 2004; Buschman & Warner, 2005). Also, it is suggested that service providers should make more effort to improve academic resources rather than changing users' behaviour (Griffiths & Brophy, 2005).

6.1.3. Information evaluation

It was found that information evaluation was the area where students performed most poorly in comparison to the remaining IL areas. Students obtained the least score in evaluating information sources (mean score: 38.36), while they had better performance in the three other IL components, developing search strategies, using English to engage with information effectively and using information ethically, with the mean score at 43.28, 49.40 and 60.11, respectively. Furthermore, students did not have the necessary skills to identify appropriate and authoritative information sources. This was demonstrated by mean scores for the test questions related to appropriate information sources and authoritative information sources, with 11.5 and 44.8, respectively. The result corroborates the view of many researchers in the field, such as Godwin (2006), P. Williams and Rowlands (2007), Pickard et al. (2014) and Walton, Pickard, Dodd, and Hepworth (2016), who agree that information evaluation skill is not young people's strength. Also, the weakness of information evaluation is proved in a range of studies which were conducted at different educational levels, for example, Adams (1999), Knight (2006), Ali et al. (2010) and Chang et al. (2012). Adams (1999) concluded that high school students had problems in evaluating scientific claims made in media sources when he examined how 12th grade students evaluated publications related to global warming. This result is supported by Knight (2006) who revealed that first-year students' performance in selecting and using information was better than evaluating information. Additionally, Ali et al. (2010) found that Engineering students lacked the necessary knowledge and skills to evaluate the Internet information. Chang et al. (2012) suggested that Singapore secondary students needed more improvement in higher-level skills, such as information evaluation, information synthesis and information use, than other skills, for example, task definition, information seeking and information access. Similarly, Vietnamese students displayed a poor performance in information evaluation. Therefore, they need to improve this skill.

The weakness in students' information evaluation skill may be caused by several reasons. Specifically, there is no gainsaying the fact that information evaluation is more complicated and entails more effort than information search (Pickard et al., 2014). Furthermore, it is assumed that evaluating information in the digital environment is a big challenge to individuals (Andretta, 2005). This could result from a large amount of information and the ease of information access in the digital environment. This research found that the easier students access information, the less carefully they evaluate it. One of the teachers said that: *"students easily access information, so they cursorily evaluate information"* (BT2). Additionally, the importance of information evaluation has not received much attention from educators as it should be (Pickard et al., 2014; Shenton et al., 2014). This view is shared by Godwin (2006) who observed that IL sites mainly concentrated on developing search skill rather than information evaluation skill. This research supports this view when it found that teachers mainly provided their students with instructions related to information search rather than evaluating it. This is demonstrated by the statements provided by the teachers, "*I use keywords to search for information via Google in order to know how to Google it and why Google provides such results. I then instruct my students how to search for information effectively"* (BT3) and *"if you now asked me to evaluate an information source, I would not know how to do it. I simply bookmark websites if I feel that they are appropriate. If you want to evaluate information, you need to know which standards can be used. However, I do not know those standards"* (BT1). These statements indicate that the problem was caused by teachers' weakness of information evaluation. They could not provide appropriate instructions related to information evaluation to their students.

This research has demonstrated that the students evaluated information sources with little effort using simple techniques, such as familiar web pages, first results, reduplication of information, author name, peer review, access rate/user number and third party. According to one of the librarians, "*I think students do not know which information source is appropriate or inappropriate. If they think it is appropriate and good enough, they will use it. They do not even care whether the information sources are appropriate and reliable"* (CL). It appears that the students' information evaluation skill was not good enough to enable them to select high quality information sources. This view is shared by Hirsh (1999), Grimes and Boening (2001), Buschman and Warner (2005), Knight (2006), Pickard et al. (2014), Shenton et al. (2014) and Walton et al. (2016), who show that

students unfailingly display a propensity to evaluate information in a reckless manner and utilise under-evaluated information source for their work rather than making more effort to select the most appropriate information sources. The University College London (2008) indicates that young people primarily evaluate information using the narrowest of criteria. They tend to select the simplest and easiest way as possible as they can (Dresang, 2005). It seems the quality of information is not as important as the ease of use and accessibility of information. Thus, evaluating information sources has not received great attention from the students, and therefore, their information evaluation skill has not been well developed. Pickard et al. (2014, p. 2) argue that, although "in a digital world you can't tell what is authenticated", it does not mean that you can effortlessly accept any information you found.

The literature shows a number of indicators which students mainly use to evaluate information sources. A summary of factors effecting students' information evaluation or trust of information can be found in Pickard et al.'s (2011) i-Trust model. They could be external factors (e.g. finance, credibility), internal factors (e.g. accuracy, authoritativeness, objectivity, currency, coverage, presentation and format, affiliations of source/site, citations and source motivation) and user's cognitive state. F. Harris (2008) noted that students relied on design and presentation features of websites, while Pickard et al. (2014) indicated that they primarily leaned on spelling and grammar, topicality, the ease of verification and the timeliness. Meanwhile, Wynne et al. (2009, p. 30) added that students evaluated search results based on five indicators: "(a) the appearance of the search terms within the title and text displayed, (b) source and authority of information, (c) credibility of the source, (d) type of publication and (e) currency of material." Furthermore, Duffy et al. (2010) demonstrated that trust on Internet information was based on its speed, frequency of updates and variety of viewpoints. Additionally, Walton et al. (2016) found that young people trusted information that has more than one author. P. Williams and Rowlands (2007) indicated that there were two main criteria used to evaluate information from electronic sources: relevance and quality/authority. Several studies found that not many students relied on the authority of information to consider whether it was appropriate (Hirsh, 1999; P. Williams & Rowlands, 2007; Pickard et al., 2014), although exploring the credibility of organisations is needed to identify a trustworthy website (Pickard et al., 2011). Furthermore, web-based information sources, especially free web sources, were predominantly used by students (Buschman & Warner, 2005; van Aalst, Hing, May, &

Yan, 2007), because users believed that the Internet was the main source of trustworthy information (Ofcom, 2016). It can be seen that none of indicators/techniques mentioned above were used by Vietnamese upper secondary students to evaluate information. Although Vietnamese students also evaluated information sources based on the authority of information sources, they used it in a different manner. Students were more confident to use information sources which provided the author's full name, for example, "*the leading newspapers often place the author's name at the end of articles. In Vietnam, they often abbreviate the name using two letters, so I do not trust them"* (BS74). In practice, this is still a questionable technique for evaluating information.

On the other hand, this research found that students gave priority to the first search results. One of the students said that: "*normally, if we use Google to search for information, we should find information on page 1, 2 and 3 of Google. Other web pages are not trustworthy anymore"* (BS74). They read through websites which were retrieved first and they then selected information that they thought was appropriate. This is supported by Lindsay (1976) who observed that school students simply took the first books they found for their assignment.

This study also corroborates Lim's (2009) and Wong et al.'s (2009) work concerning using familiar web pages, for example, Wikipedia. It was found that Vietnamese students gave priority to web pages that they often used, such as Wikipedia, Violet and online broadsheets newspapers. One of the students said that: "*When I use Google to search for information, I look at the name of the web pages. If it is Wikipedia or Violet, I will access those web pages first. If they do not provide the information that I need, I will access other web pages"* (BS74). They believed that those sources could provide them with trustworthy information. Lim (2009, p. 2196) notes that "those who had positive experiences and positive emotions regarding Wikipedia use tended to have higher outcome expectations of Wikipedia than others." Wikipedia came high on the list of priorities in order to look for background information for their works (Lim, 2009; Wynne et al., 2009). Nevertheless, it is needed to train students how to use this information source, as it may deliver inaccurate information (Lim, 2009).

This study also supports the result of Walton et al.'s (2016) work in terms of using peer review to evaluate information. Walton et al. (2016) indicated that school students believed

that bad information came from no peer review sources. Similarly, Vietnamese students considered peer review/user review as a tool to help them identify the value of information sources, for example, "*I often see comments that are provided by other users related to what I am searching for. I consider what they say and I then decide whether to use the information or not"* (BS55).

This study reveals that students gave a priority to information sources which were evaluated by a third party, such as teachers, parents, siblings and friends. One of the students states that: "*if my teachers access a web page, this means it is reliable…We can easily check information on the Internet by asking older people. This can help us obtain more accurate information"* (BS10). As noted in the literature review, research indicates that "people go to another person for information first" (M. Gross & Latham, 2007, p. 346). McNicol (2003) notes that students tend to develop their own learning network, including teachers, parents, siblings, friends, etc., in order to seek help from them. Students may be unsure of the most appropriate information source they should use, but they always know who is the best to ask. This may result from "the need for reassurance" (M. Smith & Hepworth, 2007, p. 6). Sites suggested by teachers and librarians are straightforwardly accepted by students (Herring, 2009). M. Smith and Hepworth (2007) found that students intended to use their teachers when searching for information more than their family because of teachers' subject specialist. On the contrary, Walton et al. (2016) found that school students' trust in parents was strongest compared with other sources, such as teachers, peers and the media. Thus, Large et al. (2008) put the emphasis on the role of librarians, teachers and parents as well as the way materials should be prepared in terms of content, vocabulary and syntax in order to help students select appropriate information. Crawford and Irving (2009) stress that it is needed to include people as a source of information because of the social interaction in learning environment. They indicate that "people as a source can be not merely authoritative but a form of interaction from which new knowledge grows" (Crawford & Irving, 2009, p. 34). It can be seen that, this study firmly consolidates the results of earlier research by confirming that students displayed a propensity of using a third party to evaluate information sources.

In addition to the above techniques, Vietnamese students also evaluated information sources based on the reduplication of information, for example, "*the leading newspapers in Vietnam often publish information that tends to be similar, so we can trust them"* (BS74),

and access rate/user number, as said by one of the students, *"I often use web pages that are accessed by many people"* (BS10). However, it is argued that if misleading information is provided, students may not find high quality information.

6.1.4. The ethical use of information

During this investigation it was found that students achieved the best-scored performance in using information ethically (mean score: 60.11) in comparison with the three remaining IL components. This demonstrates that students of the two schools had an understanding of ethics in using information. This finding supports the work of P. Williams and Rowlands (2007) who found that there was an overwhelming number of young people understanding how to prevent copyright infringement when accessing information on the Internet. Nevertheless, some researchers hold opposite view, such as Shih and Allen (2007) and Chang et al. (2012), who observed that there was a lack of understanding of intellectual property among students. It can be seen that earlier research found different results regarding students' understanding of ethical use of information. In the context of this study, Vietnamese students demonstrated that they had an understanding of this issue.

This investigation found that, although students displayed an understanding of ethics in using information, it seems they did not comply with the ethical regulations in practice. The difference between students' IL scores and their actual behaviour can be explained by Bryman (2012, p. 179) who indicates that "people may answer a question designed to measure racial prejudice, but respondents' actual behaviour may be at variance with their answers." In the IL test, Vietnamese students obtained the best scores for questions related to ethics in using information, as explained above. However, the interview data showed that, in practice, they often copied information without caring about ethical issues, for example, one of the students said that: "*normally, I just copy and paste"* (BS74). This result strongly consolidates the view of Shih and Allen (2007) who note that Google generation lacks respect of intellectual property. Students display a propensity to copy and paste ideas/information from different sources rather than evaluating them (Lindsay, 1976; M. Smith & Hepworth, 2007; Secker & Coonan, 2013). This could result from the fact that the online information environment probably creates many chances for plagiarism grow (G. Wood, 2004). Pavey (2011) adds that lack of knowledge of referencing and lack of capability to find appropriate information may result in the above problem. Evidence suggests that extracting information is a positive approach to assist individuals in

constructing their own knowledge from a variety of sources of information (Kuhlthau, 2013). The first performance indicator of standard one of the ACRL model also states that: "the information literate student summarizes the main ideas to be extracted from the information gathered" (ACRL, 2000, p. 11). Therefore, it is assumed that extracting and summarising information are necessary to help students build up their own knowledge. However, this may result in plagiarism if students do not know how to extract and summarise information as this research found that students copied information from information sources which they had found, for example, *"when we do our own assignments, we sometimes copy important information from other assignments and from where we find information"* (CS28). It is suggested that educational institutions need to take action to prevent the occurrence of plagiarism recently (Pavey, 2011).

6.1.5. The use of English to engage with information

Although students had a better performance in using English to engage with information (mean score: 49.40) in comparison with the two other skills, developing search strategies (mean score: 43.28) and evaluating information sources (mean score: 38.36), it was found that the behaviour of using English to engage with information has not been thoroughly shaped, as said by one of the teachers, *"in practice, students mainly use Vietnamese to search for information. They rarely use English"* (CT2). Experience in using English to engage with information was mainly shared by high scoring students. Nonetheless, they primarily used English keywords to search for information, as said by one of the high scoring students, "*I study English in foreign language training centres. Teachers often require me to search for information related to lessons and they provide me the keywords"* (BS74). In the context in which students interact with many English information sources, knowing how to use English to engage with information is essential as strongly evidence by a range of studies conducted by K. Chu (2009), S. Chu et al. (2011) and D. Chu et al. (2012), who note that the proficiency of using foreign languages in general and English in particular, has a positive impact on the development of IL skills. This view is confirmed by N. Johnson (2014) who indicates that limitations of the use of English language affect students' experience of engaging with information. Brazier and Harvey (2017) add weight to the importance of using English when they found that students whose first language was not English could not choose complete relevant documents when using e-government services. The problem of not using English to find information may bring disadvantages for Vietnamese students in engaging with information.

6.1.6. Information literacy self-assessment

The study found that students overrated their actual IL level. This is corroborated by a greater number of students self-rating their IL at a high level (26.78%) in comparison with the number of students achieving high scores in the test (4.4%). They also self-rated their ability at a high and average level for almost IL components. This finding reflects the literature showing that young people inaccurately self-assess their IL competence and tend to overestimate their ICT/IL knowledge and skills (Coupe, 1993; Cuffe & Bruce, 1999; Maughan, 2001; Warner, 2003; Buschman & Warner, 2005; Gravill et al., 2006; Harrison et al., 2006; Ivanitskaya et al., 2006; M. Gross & Latham, 2007; K. Anderson & May, 2010; Price et al., 2011; Shenton et al., 2014). The literature also reveals that students are very confident in their knowledge of the information system. For example, 80% of young people (aged 16-18 years old) involved in a study which explored their web-based information evaluation were confident in their understanding of the work principles of the Internet and search engines (Shenton et al., 2014). Nevertheless, they may not successfully demonstrate their knowledge in practice. This view is shared by Colaric (2003) who demonstrated that students failed in describing their sematic knowledge of search engines. It can be seen that this research firmly consolidates the results of earlier research by indicating that Vietnamese students also displayed the propensity of overestimation of their actual IL level. As noted in the literature review, this overestimation may reduce students' motivation in developing necessary skills (Pintrich, 2003; Freund & Kasten, 2012). It is suggested that students' awareness of their actual IL level needs to be increased (Ackerman & Wolman, 2007).

This investigation also revealed that male students are inclined to think more positively of their IL level than female students. Specifically, 24.24% of females compared with 29.76% of males rated their IL at a high level, although boys' IL scores were lower than girls (mean score: 44.67 vs. 47.92). This finding firmly consolidates the results of research carried out by M. Gross and Latham (2012) and Latham and Gross (2013) who found that students with below-proficient IL skills exaggerated their ability. In the context of this study, male students inflated their IL capability, although their IL scores were lower than females.

A further analysis of the relationship between IL scores and self-assessment reveals that there was a positive linear correlation between the two variables, with $r < 0.2$. In other words, students' IL scores could be used to predict their self-assessment. This view is confirmed by M. Gross and Latham (2007) and Rosman et al. (2015a) who demonstrated that there was a relationship between self-assessment and actual IL skills. Similarly, Coupe (1993) and Ivanitskaya et al. (2006) found that there was a positive correlation between self-assessment and actual skills. On the contrary, Geffert and Christensen (1998) revealed that there was no correlation between self-assessment and IL test scores. It can be seen that research found different results of the relationship between students' actual IL level and their self-assessment of that ability. In the context of this study, the positive relationship between the two variables is confirmed.

6.2. Factors affecting students' information literacy

6.2.1. Internal factors

6.2.1.1. Students' awareness of information literacy

This research highlights that students displayed a lack of comprehensive understanding of the IL concept. The IL test found that 88% of the students had not heard or read about the term IL before taking part in the study. For those who had heard or read about the term, they still could not provide a complete explanation of the IL concept. There was a student who considered IL as the ability to use information, "*IL is the ability to use information reasonably and correctly"* (BS5), while another student believed that information literate individuals needed to know methods or techniques to search for information, "*IL is the way we find information"* (BS16). There were some students who understood that information literate individuals could understand the meaning of information through the evaluation of the content of information, for example, "*IL is the ability to understand correctly information provided"* (BS17). Interestingly, many students believed that IL was knowledge, for instance, "*IL is knowledge that I need to know"* (BS34). An incomprehensive understanding of the term might significantly affect their IL capability. Further analysis between students' IL level and their awareness of IL demonstrated that students' awareness of IL changed in proportion to their IL capability. High and average scoring students displayed a higher level of awareness of the importance of IL, its role to learning success, and the new active teaching and learning method. For example, "*IL is very necessary"* (BS74) and "*I think that IL helps us understand and know much more, and broaden our minds…It is rather important"* (CS91). However, low scoring students did not

highly value the importance of IL, "*IL is also unnecessary because it does not affect my life too much"* (CS28). It can be seen that students who had higher awareness of IL also had better IL performance. Cognitive elements are pervasive in IL models (Hepworth & Walton, 2009), for example, the AASL standards (AASL, 2007) and the ACRL models (ACRL, 2000, 2015). This demonstrates the significance of components related to awareness/cognition to the development of IL. However, Bundy (1999) indicates that students' information awareness has not been well developed by the time they move in to college and university education. As a result, there is a limited understanding of the different elements of IL among students (M. Smith & Hepworth, 2007). This is demonstrated in the context of this study by indicating that IL elements were not fully mentioned in the students' IL explanation. Therefore, IL programmes need to concentrate on "fundamental task of shifting the youngsters' attitudes and changing their mindsets" (Pickard et al., 2014, p. 8). From what has been discussed above, it is suggested that factors related to students' awareness/cognition should be involved in the IL teaching model in Vietnam's upper secondary schools.

6.2.1.2. Students' academic capability

The study demonstrates that School B's students (a public school) had a better IL performance than School C's students (a private school) (means score: 52.61 vs. 40.18) Evidence from this study found that average and high IL scores were possessed by a greater number of students in School B than School C. The percentage of students achieving average IL scores for School B and School C was 88.04% and 75.82%, respectively. Furthermore, the proportion of students obtaining high scores for School B was higher than School C (6.52% vs. 2.2%). School B's students also had better performance in the four IL testing areas than School C's students. Also, Grade 12 students had higher scores in overall IL and the four IL testing aspects than the two other grades (mean score: 50.58 vs. 43.13 and 45.02). Further analysis provides evidence that type of schools and study level made a difference in students' IL scores, with $r = -.415^{**}$ and $r = .157^{*}$, respectively. As mentioned in the study context chapter, Vietnamese students ordinarily apply to study in private schools when their entrance examination marks are not adequate to enter local public schools (World Bank, 2014). Evidence suggests that students who achieved higher academic results also displayed a better IL performance. This finding is confirmed by S. Chu et al. (2011) who found that improvement in IL and IT skills was significantly predicted by students' academic ability. This is consistent with research

conducted by Chang et al. (2012) who demonstrated that academic streams affected IL performance of secondary students. Specifically, they found that the express stream obtained higher IL scores than their peers in the normal academic stream. It can be seen that the positive impact of the academic capability to the development of students' IL can also be found in Vietnam's upper secondary students. Nevertheless, research indicates that academic ability and trust in the Internet are inversely proportional to each other (Duffy et al., 2010).

On the other hand, although this research did not investigate the influence of IL to students' academic capability, as noted in the literature review, IL also has a positive impact on students' academic performance. Nearly three decades ago, Goodin (1991) found that high school students who performed better in the IL test after receiving IL instructions could achieve better results when entering HE. Bordonaro (2008) revealed that there was a connection between IL and writing process. Research carried out by Todd (1995), Mohammad (2014) and Alinejad, Sarmad, Zandi, and Shobeiri (2012) reinforces the above studies by exploring that there was a positive correlation between students' IL and their academic performance.

6.2.1.3. Information literacy self-learning

There is evidence from this investigation showing that students' IL self-learning which resulted from intrinsic motivation could significantly affect their IL scores. Specifically, students who were better at taking full advantages from activities both within the schools and outside of the schools (including homework, textbook use, activities outside of the class, an inclination to seek support from their family, library use, teachers' instructions, peer support and following channels of information) also had better IL performance. The study found that high and average scoring students could develop their IL through doing homework and asking for help from their family when they faced information problems, for example, "*I sometimes have to find more information to complete my homework"* (BS55) and "*if I do not know, I will ask my parents. They can tell me things. Sometimes they do not know the answer, but they will give me some books to read to understand more"* (BS74), while low scoring students did not share any experience about these. Only high scoring students took part in activities outside of the class, used the library and followed several information channels to update information, for example, *"I sometimes need to find information when I take part in activities of the Ho Chi Minh Communist Youth Union in my*

school or in social activities" (CS51), "*I took part in the Literature Olympic Contest. So, I borrowed some of the many books in the library, and I also searched for more information on the Internet using the library computer"* (CS51) and "*I read three newspapers every day. Actually, newspapers provide us with a lot of information, so reading them helps us enhance our knowledge"* (BS74). However, average and low scorings students did not participate in those activities, as they said: *"I never take part in academic clubs and extracurricular activities in my school"* (CS28) and "*I do not read books in the library"* (BS55). All three groups of students agreed that their IL capability could be developed through using textbooks, teachers' instructions and peer support, for example, "*textbooks have advanced questions so I have to search for information outside of textbooks to answer them"* (CS91), "*I also ask my teachers to learn how to find that information"* (BS74) and "*I search for information in different sources and then discuss with my friends to find which is the most appropriate"* (CS51).

The results show that the above activities might not directly provide IL instructions to students, but they gave students much more opportunities to engage with information. As a result, students' IL might be improved. This supports the view of the River Parishes Community College (2009, p. 14) which suggests that it is necessary to provide students with opportunities to "access to in-class and out-of-class experiences in which they locate, evaluate, and use information" in order to help them practice information-processing skills. This not only positively affect students' academic performance, but also their activities outside of the academic environment. At the same time, Bruce (2004) introduces four indispensable components of an IL programme: resources that assist the learning of specific skills and a curriculum that creates opportunities to learn specific skills, promotes active engagement with the information environment, and encourages reflection and documentation of learning about effective information practices. This reveals that active engagement with the information environment promotes the development of IL. Self-learning/active engagement can result from "a faulty sense of skill attainment, because skill development is not evaluated against an accepted criteria of competence" (M. Gross & Latham, 2007, p. 346). Pintrich (2003) demonstrated that students who were highly motivated to learn likely displayed a better level of academic achievement. Motivation can be considered a hidden reason that affects students' IL in general (Crawford & Irving, 2009) and independent information searching (Crow, 2007). Motivation to learn that can stem from an inclination for knowledge and self-improvement is proposed to have influence on making

more effort to take advantages from the above activities. Students experience a range of emotions during their learning (Järvenoja & Järvelä, 2005; Frenzel, Pekrun, & Goetz, 2007) and 'feeling' is considered a component of the information search process (Kuhlthau et al., 2007). At the same time, active search or motivation to conduct the search also affects individuals' information processing and use (T. Wilson, 1999). Hence, M. Smith and Hepworth (2007) suggest that motivation of developing information skills and the implications for the environment and support should receive great attention from practitioners when designing an IL intervention. From what has been discussed above, it is recommended that motivation or affective elements need to be involved in the IL teaching model for Vietnam's upper secondary schools.

6.2.2. External factors

6.2.2.1. Teaching staff

It was found that teachers' IL capability and their information behaviour might affect students in engaging with information. This is evidenced by the superficial use of Google in using simple search techniques and poor information evaluation skill of teachers, as discussed in Section 6.1.2 and 6.1.3. Similarly, D. Williams and Coles (2007) found that school teachers displayed a propensity to use pre-digested information and informal sources rather than formal journal sources and libraries for their work. This might have an impact on providing IL instructions to students. As discussed in Section 6.1.3, students ordinarily involve teachers in their learning network to seek help from them (McNicol, 2003; M. Smith & Hepworth, 2007). Students use their teachers' suggestions to seek information (Herring, 2009), so as a result, teachers' behaviour might be passed on to their students. In the context of this study, the superficial use of Google, the use of keywords to find information and a limitation of information evaluation skill among students might be passed from their teachers.

6.2.2.2. Support from family

It was found that the proactive support from family might positively affect their children's IL capability. There is evidence that high scoring students received great attention from their family in solving information problems, while low scoring students were not given much support by their parents. Students' family could introduce their children books and websites to help them obtain information, for example, one of the high scoring students said that: *"my parents often introduce good books and websites to me to help me obtain*

useful information" (BS74). On the contrary, low scoring students were not given much support by their parents, one of them said: "*normally, my parents do not pay attention to my study"* (BS10). The literature shows that students increasingly prefer to make use of people (e.g. family, friends and teachers) when searching for information (Hertzum et al., 2002; M. Smith & Hepworth, 2007). Evidence suggests that library anxiety and uncertainty may be one of the reasons for these young people making use of people when undertaking a search (M. Smith & Hepworth, 2007). In the context of this research, Vietnamese students rarely used the library. Only high scoring students displayed the propensity of using the library to cater for their learning, as discussed in Section 6.2.1.3. Students feel more comfortable and secure when seeking help from their family (M. Smith & Hepworth, 2007). In addition, there is evidence that parents' knowledge has an influence on students as Joanne (15 years old) said that she did not feel a sense of ownership of the Internet because of her parents' limited understanding of IT (Duffy et al., 2010). On the contrary, Chang et al. (2012) revealed that students' ethics scores were negatively affected by their father's highest educational qualification. Research indicates that there is an impact of students' family/parents to their IL development. It could be either a negative or positive impact. In the context of this study, support from family positively affected the development of students' IL. From what has been discussed above, an idea of involving parents into the IL intervention for Vietnamese upper secondary students is emerged.

Although this research did not provide any evidence to demonstrate the impact of friends/classmates to students' IL, previous research widely reports that students also receive the support from their friends/classmates. M. Gross and Latham (2007) found that students learnt skills from their friends and classmates and they often shared their skills to each other. Therefore, the authors suggest that it is essential to provide students with opportunities to develop their IL in the educational environment. Furthermore, as noted in the literature review, previous research indicates the positive impact of collaborative work/peer interaction to students' knowledge construction (Carleo, 2016) and their understanding/awareness of IL (Pickard, 2008). Building on the same theme, Dixon and Shenton (2003, p. 20) suggested a grounded model of information seeking via other people as they "are motivated by a desire or necessity to find information on school curriculum topics."

6.2.2.3. Teaching method

Evidence from this study shows that one reason for the lack of students' IL skills was as a result of the current transmission approach in teaching. The number of students achieving high IL scores was low (4.4%). Furthermore, the study found that there was a slight difference between the two schools in teaching methods. School B's students were encouraged to become independent learners, while School B's students were too dependent on their teachers. One of the teachers said that: "*private schools' teachers are required to do everything for their students. Therefore, students are too dependent on their teachers and students cannot develop their search skills…As for public schools, we often ask students to find information and do presentations much more than private schools. This helps students develop their search skills. In private schools, students are also required to do the same thing, but students do not need to if they do not want to"* (BT3). This might make the IL scores of School B's students were higher than School C's students (mean score: 52.61 vs. 40.18). Also, teachers mainly introduced information sources which they often used to students instead of providing their students with instructions to help them become independent information seekers, as said by one of the teachers, "*if they ask me about the English dictionary, I just tell them the online dictionary that I often use, such as Oxford…I just tell them to access websites that I know"* (CT3). The transmission teaching method mainly concentrates on the final product through memorising information rather than encouraging students' active learning (Streatfield & Markless, 1994; Jonassen et al., 1999; Nola & Irzik, 2006; Kuhlthau et al., 2007; Birkhead, 2009; Streatfield et al., 2010; Chang et al., 2012; S. Chu, 2012). Working for the test can negatively affect students' subsequent endeavours (Oakleaf, 2008). Therefore, students may have no motivation to develop their IL, although it is considered an essential capability for independent learning. This approach in teaching and learning might also result in the absence of IL programmes, as explained in more detail in Section 6.3.2.2. It is suggested that a new teaching and learning approach that promotes knowledge construction through engaging with information needs to be involved in the IL teaching model for Vietnam's upper secondary schools.

6.2.2.4. Study environment

It was found that the study environment might have an impact on students' IL. This is evidenced by the interview data. According to one of the teacher, *"we often make photocopies from books. This means we do not obey the copyright laws. Therefore, students can do the same thing"* (CT3). This indicates that students did not obey ethical guidelines

because of the copyright infringement in their study environment. This is consistent with what Webber and Johnson (2006) said. They imply that the external environment rules over the development of personal IL. This view is shared by Lloyd (2011) who stresses that the development of IL needs to be situated in a specific setting. Vietnamese students did not pay much attention to follow ethics in using information, for example, they still preferred to make photocopies from books, although they had an understanding of that issue.

6.2.2.5. Technology use

Although several reasons are given to explain students' IL scores, it was found that the use of technology had no impact on students' IL capability. It is demonstrated that social-economic factors have a great effect on equipping computers, hardware, Internet, etc. for students (Pickard & Dixon, 2004; Calvert et al., 2005). Similarly, this study observed that School C had more abundant investment than School B regarding infrastructure in general and technology equipment in particular, as discussed in the methodology chapter (Section 4.7.1.3). The teachers also confirmed that: "*I studied in a private school, so I know that private schools' students have to pay a lot of money, so they have more chances to use technology devices to find information than public schools' students"* (BT1) and "*I think the infrastructure of public schools is not as good as my school. My school's students are equipped with good facilities to support their learning"* (CT1). School C's students also had more opportunities to own better technology equipment in comparison with School B's students because of economic conditions of their family. Nevertheless, School B's students did better in the test than their peers in School C (mean score: 52.61 vs. 40.18). This reveals that the development of students' IL was not affected by the use of technology. However, there were Vietnam's educators who still supposed that the limited use of technology could negatively affect the development of students' IL, for example, "*not all families have the Internet and computers. Some families even do not allow their children to use the computer even though they have it. How can students develop their IL in that case?"* (BM). As noted in the context of the study, previous research suggests that equipping schools with ICT tools is required to help students develop needed skills (Ly & Jalil, 2013). Nonetheless, Vietnam's educators were witnessing a lack of ICT access both at home (UNESCO, 2013b) and at schools (Peeraer & Van Petegem, 2012) of their students, and the limited use of ICT in teaching (UNESCO, 2013b). Therefore, the popular belief that technology

significantly affects students' IL still persists. However, this research and many other studies do not advocate their view.

Vietnam is witnessing a rapid increase in the number of Internet users (Belawati, 2003; Welch & Murray, 2010; Murphy et al., 2014). The number of people who has technological devices has also increased rapidly (We Are Social, 2016), especially young citizens (Moore Corporation, 2015). No one can contradict that this brings many benefits for users in accessing information sources. However, CILIP (2014) argues that IL skills need to be applied in different contexts. K. Ngo and Gwangyong (2014) indicate that more opportunities to use technology devices and access digital information sources may not help students improve their information skills, because the effectiveness of applying IT is contingent on students' awareness. The ease of using digital technology may lead to unforeseen consequences (Shenton et al., 2014). Evidence suggests that the easier students access information, the less carefully they evaluate it, for example, *"students easily access information, so they cursorily evaluate information"* (BT2). This view is consolidated by Chang et al. (2012) who found that school students' poor information evaluation skill resulted from Internet access at home. Similarly, S. Chu (2012) showed that students did not spontaneously achieve a high level of web literacy, although using mobile phones and the Internet is very prevalent among tweens (Andersen et al., 2007). Also, there is evidence to suggest that young people were not good at selecting information sources, although they were "very confident users of the Internet" (Bartlett & Miller, 2011, p. 5). Furthermore, the literature indicates that providing students with training in technology use does not create information literate individuals (Boekhorst, 2000 cited in Virkus, 2003). Cheuk (2002) revealed that employees who had the ability to handle technology might not be information literate individuals. In the same vein, a study conducted on children from six months to six years old found that there was no relationship between the frequency of playing computer games and children's reading ability (Calvert et al., 2005). It can be seen that this research firmly consolidates the results of many earlier studies by confirming that technology use is not the decisive factor in the development of students' IL. In other words, the opportunity to use technology devices is not proportional to students' IL level.

Although there is no evidence provided, this study does not deny the importance of technology skills. Along with the development of IT, electronic resources are rapidly increasing. This requires individuals to have appropriate information skills to use resources

effectively (Pickard & Dixon, 2004). A high level of Internet anxiety may make individuals feel difficult to put their faith upon Internet sites (McKnight & Kacmar, 2006). It is suggested that "information literate individuals necessarily develop some technology skills" (ACRL, 2000, p. 3), because an individual "cannot readily be divorced from the technological competence of the inquirer" (Candy, 2002, p. 8).

6.3. Teaching information literacy

6.3.1. Lack of information literacy programmes

The study found that IL still remained under-development at both national and institutional level. Although promoting lifelong learning is considered one of the main educational objectives of Vietnam's education system in general and the two schools in particular, as stated in the Educational Development Strategy 2010-2020, "*by 2020, our country's education system will be fundamentally and comprehensively improved…ensuring social justice in education and promoting lifelong learning, and gradually forming a learning society"* (Educational Development Strategy 2010-2020), the schools in this current investigation have not delivered any formal IL programme, as said by both the students and the professionals, *"the school does not have any programme that can help me develop the ability to find, evaluate and use information"* (CS91) and *"to be honest, we do not have any specific instructions related to IL"* (CT3). The analysis of documents indicated that the study programme mainly focused on what students needed to achieve concerning knowledge, skills and attitudes after completing the study programme in general and the lessons in particular. None of them showed the existence of IL in general and the four IL components in particular. Students could only receive simple instructions from their teachers regarding finding information when they conducted research projects. However, students only received guidance from their teachers when they made the request. One of the teachers said that: "*I give students instructions regarding finding information in some cases, but not many"* (CT3). As noted in the literature review, the library is expected to assist individuals in developing IL skills (CILIP, 2014; Jinadu & Kaur, 2014). Nevertheless, in this study, it appears that the two libraries still performed the function of a traditional library. They had not made any move to assist students in developing IL. The two librarians said that: "*if students want to find a book and ask me, I will find it for them. That's all…This is a traditional library. We mainly deliver a loan and return service. We also have no instructions related to IL"* (BL) and *"my library does not give students IL instructions"* (CL). The absence of IL instructions could be the reason leading to students'

IL self-learning, as discussed earlier in Section 6.2.1.3. This finding supports the view of many scholars, because they demonstrate that there is a lack of IL initiatives in educational institutions at all levels (Bundy, 1999; Seamans, 2002; Hepworth, 2003; Pickard & Dixon, 2004; M. Gross & Latham, 2007; M. Smith & Hepworth, 2007; Shenton et al., 2014). It can be seen that the lack of IL programmes is not only a noticeable issue in Vietnam, but it also happens to many educational institutions around the world. However, the literature widely reports that IL plays a significant role to students' learning. The absence of IL instructions at high school education level may bring disadvantages for students when they enter HE (Bundy, 1999; Pavey, 2013). It is suggested that the implementation of IL programmes should receive great more attention from educators in order to improve and enhance students' IL level (M. Smith & Hepworth, 2007). With regard to Vietnam, it is recommended that an IL programme should be delivered to improve students' IL.

6.3.2. Reasons for lack of information literacy programmes

6.3.2.1. Time pressure

It was clear from this investigation that time pressure was one of the main reasons leading to the nonexistence of IL programmes in the two schools. Time pressure resulted from two main reasons: private class attendance and strict learning timetable. The students said that: "*besides the official classes, we also have extra classes in Maths, Physics and Chemistry on Monday, Wednesday and Friday every week. I also have to attend special subject classes on Thursday afternoon. I spend too much time studying"* (BS55) and "*I have to study in the school from the morning until afternoon, and I also have private evening classes two days every week"* (CS28). Furthermore, teachers were allowed to organise private classes at home, as stated in school B's reports, "*extra classes are organised for students…At present, 100% of the school's teachers are licensed and properly regulated to organise private classes"* (School B's report). As highlighted in the study context chapter, a busy learning schedule and private class attendance make schools in general and students in particular have less time for alternative activities (World Bank, 2013) which can support the development of IL. This view is shared by Webber and Johnson (2006) who note that the busy subject curriculum can create challenges for teaching IL, although IL programmes' usefulness is broadly conceded. Time challenges are also mentioned in a study carried out by M. Smith and Hepworth (2007). They suggested that school timetable should provide "lessons dedicated for research when students would have good access to resources and support", because time pressure was found dominated students in conducting project work

(M. Smith & Hepworth, 2007, p. 12). Majid et al. (2011) also observed that, although nurses highly valued the role of evidence-based practice, they found it was difficult to adopt this into practice due to lack of time, inability to understand statistical terms and inadequate understanding of the jargon used in research articles. They had limited time to search and read research articles as a consequence of the very heavy workload. Furthermore, Hepworth and Smith (2008) confirm that time pressure displays a great effect on users' IB, because they will carry skills task based on the amount of time they have. As a result, skills may not well developed using the little time available (D. Williams & Coles, 2007). This view is clearly demonstrated in the context of this study by indicating that there was a lack of IL capability among students. The schools could not go beyond the formal study programme to provide students with activities which could support students in the development of IL. Private class attendance that resulted in time pressure appeared as a noticeable in this research. It was found that students were not willing to involve in activities which could help them develop their IL, for example, "*I think that if you provide an IL course to students, they will give time for private classes rather than the IL course"* (BS74).

6.3.2.2. Teaching method

Evidence from this study shows that one reason for the neglect of students' IL skills teaching was as a result of the current transmission approach in teaching. Although the schools were moving from the transmission teaching method to a constructivist approach to student learning (Vietnamese Government, 2005), it appears that they still gave priority to the traditional method and there was a slow improvement in teaching methods. The Educational Development Strategy 2010-2020 indicates that: "*the study programme, teaching and learning method, examinations, assessment and evaluation are slowly improving…Teaching methods are behind the times"* (Educational Development Strategy 2010-2020). This finding reinforces research conducted by Pham (2010) and N. Nguyen and Williams (2016) who observed that a didactic and teacher-centred teaching approach was still mainly used in Vietnam's education system, although several educational reforms had been implemented. The transmission approach does not motivate students to engage with information outside of what has been taught by their teachers and textbooks. Students were still encouraged to memorise what has been taught by teachers instead of seeking information beyond textbooks. This means students can complete their assignment with no use of outside materials. The professionals said that: *"at upper secondary education level, students are mainly tested on what they have been taught. This means they can get high*

scores by memorising what has been taught by teachers. IL is not helpful in this case so we do not need to teach IL to students. However, it is needed at HE level" (BT1) and "*at present, teachers are substitutes for many things, even the library…What students learn is limited in the textbooks. Finding information outside of the textbook is not necessary"* (CM). Furthermore, teachers are required to find information for their students instead of providing students with IL instructions to help them find information by themselves, as said by one of the teachers, "*teachers take responsibility to find information for students. I think, to date, we still use the traditional teaching method whereby teachers provide knowledge to students"* (CT3). This may affect the development of students' IL, because outside materials and reading assignments allow students to practice their critical thinking and develop necessary information skills (River Parishes Community College, 2009). The literature widely reports that the spoon feeding approach does not assist students in becoming independent learner (Birkhead, 2009; Chang et al., 2012). As a result, the development of IL programmes has not received much attention from the schools and students. This is demonstrated by a lack of IL instructions, as discussed earlier in Section 6.3.1. Not only Vietnam, many other countries also face the same problem. For example, a survey on the UK school libraries found that there were some schools attaching to the traditional teaching approach, therefore delivering IL work was not welcomed (Streatfield & Markless, 1994; Streatfield et al., 2010).

It is suggested that the schools need to replace the traditional teaching and learning by a constructive approach which creates a student-centred teaching environment along with problem-solving opportunities (Bruce, 1997b; J. Thomas, 2000; David, 2008). This view is supported by Sparrow et al. (2000), Virkus (2003), Hepworth (2006) and Andretta (2007) who show that a move from teacher-centred teaching to student-centred model promotes the development of IL. The lack of a pedagogic framework related to the project process means students are not encouraged to pay attention to IL as a significant factor in their learning (M. Smith & Hepworth, 2007).

As stressed in the context of the study chapter, Vietnam' schools are moving to a project-based learning which is a mode of the constructivist approach. It is recommended that the project-based learning should be attached to the IL teaching model for Vietnam's upper secondary schools, for example, "*the school should require students to conduct projects. Let students raise their voice much more than teachers. This will help students develop their own*

knowledge" (BS10) and "*the new teaching and learning method that focuses on the project-based learning requires students to engage with information. Therefore, if you want to develop students' IL, you should pay more attention to that teaching and learning method"* (BL). According to Battersby (1999), students are motivated by academic projects that enhance their lives and effectively contribute to society rather than meeting the requirement of passing the test. The literature indicates that the project-based learning promotes independent learning (M. Smith & Hepworth, 2007). Independent learning and the free exploration of information enable learners to develop their critical thinking (River Parishes Community College, 2009). Critical thinking skills are the requirement to the implementation of IL teaching (Walton & Hepworth, 2013). Also, "IL as the first component in the continuum of critical thinking skills" (Bruce, 1997b, p. 34).

This study also found that, although the schools made an attempt to switch to a new teaching and learning method, they still predominantly used the traditional approach to assess learning outcome which encourages memorising information. For example, the lesson plans require students to "*recite the work "Summer Landscape"* (Lesson plan – School C) and "*recite the poem "Thu Dieu"* (Lesson plan – School B). Furthermore, the professionals confirmed that: "*students are now experiencing exam stress and pressure, especially the traditional learning assessment method"* (CM) and "*if the MOET changes the form of examinations, teachers will change the teaching method. Although they ask teachers to change the teaching method, they still assess students using the traditional learning assessment method"* (CT3). This assessment approach mainly concentrates on the learning potential inherent in the task (Moore & George, 1991). This does not encourage students to develop IL skills in order to improve their academic performance. Thus, traditional learning outcome assessment method was considered one of reasons that resulted in a lack of IL programmes in the schools. M. Smith and Hepworth (2007) also show that assessment methods have an influence on students' extrinsic motivation. The literature indicates that assessment is considered an essential part in a curriculum. This can be found in the work of Biggs (1996) and Secker and Coonan (2013). They all suggest a curriculum that aligns three component, including learning outcomes, activities and assessment mechanism. Additionally, T. Mayes and de Freitas (2013, p. 18) further propose that "we need to examine very carefully what assumptions we are making at each stage and to align those." From what has been discussed above, it is recommended that the project-based learning which is applying in Vietnam's schools should be thoroughly implemented. Also, the

learning outcome assessment method should be altered to make it suit the new teaching and learning method, as suggested by one of the teachers, "*IL can only be developed if the learning outcome assessment method changes"* (BT2).

6.3.2.3. Resource issues

6.3.2.3.1. Human resources

It was found that issues surrounding human resources significantly affected the development of IL programmes in the two schools. Specifically, the study observed that librarians lacked professional capability. The majority of librarians did not have a professional qualification as a school librarian. One of the librarians said that: "*the majority of school librarians do not have a professional qualification for librarians. Therefore, they do not have much understanding of IL"* (CL). Furthermore, an analysis of the school and library reports found that each school had only one librarian who had a professional qualification as a school librarian. Accordingly, the development of IL programmes might face many challenges and this might cause a lack of faith in librarians among students. This result does not come as a surprise, because previous research indicated that Vietnam's school librarians did not have high quality professional capability (Welch & Murray, 2010; N. Vu et al., 2013). Librarians are expected to assist education institutions in developing IL programmes (Library and Information Association of New Zealand Aotearoa, 2001; Kelley & Orr, 2003; AASL, 2007; CILIP, 2014; Jinadu & Kaur, 2014). However, lacking a teaching background may limit school librarians' contributions in the implementation of IL and teaching activities (M. Smith & Hepworth, 2007; IDS & ITOCA, 2010). Research conducted in Malaysian school libraries found that librarians were not ready for their role as an IL implementer because of their lack of IL skills (Tan & Diljit, 2010; Tan, Tan, & Tan, 2015) and their lack of library and information science qualifications (Yaacob & Samsuri, 2003). Nevertheless, the above studies contradict Tan et al's (2014) research which found that librarians' cognition was ready to implement IL instructions. Similar to Vietnam, Malaysian schools required teachers to take responsibility to manage the library instead of employing full-time library professionals. As a result, they did not have adequate time to manage the library effectively (Kamal & Normah, 2012). Building on the same theme, a survey conducted in the UK school libraries found that there were only 58.7% of those who were responsible for running the library were professionally-qualified school librarians. Also, several of the library staff did not involve in IL work in the school (Streatfield et al., 2010). A more recent survey in the UK school libraries also observed that 68% of school libraries had experienced

no change in staffing levels from previous years (Softlink, 2015). It can be seen that, in the context of this research, Vietnam's school librarians were not ready to deliver IL programmes because of their lack of professional capability.

There was a lack of professional capability, IL capability and awareness of IL among teachers. They also had a limited understanding of the new teaching and learning method, especially older generation teachers. They did not have much experience and competence to deliver a new teaching method that equips students with the necessary capabilities to become lifelong learners. There were teachers who even could not use the Internet. Therefore, students could not receive appropriate instructions related to IL. One of the students said that: "s*ome teachers do not know how to find information on the Internet. They do not even know whether the information is true"* (BS10). This was confirmed by one of the teachers, "*young teachers can use computers and email. However, for older teachers, some do not even know how to send an email. Therefore, never ask them to do anything like searching for information or to give such instructions to students"* (BT2). The school report also indicates that: "*older teachers have limitations in their professional capability and they have no motivation to emulate and improve"* (School B's report). This finding is consolidated by Duke and Ward (2009) and J. Smith (2013) who indicate that more work needs to be done to help teachers become IL implementers since many of them have not been prepared to deliver IL instructions to their students. It was revealed that teachers did not transfer their skills and attitudes towards information to their students, although they were information literate (Merchant & Hepworth, 2002). Similar to Vietnam, schools in Africa were witnessing a lack of IL skills among academic staff (IDS & ITOCA, 2010). Teachers were found uncertainty and lack of confidence in finding and evaluating information (D. Williams & Coles, 2007). Vietnamese teachers also lacked of confidence of their IL skills and they therefore were not confidence in providing IL instructions to students, as said by one of the teacher, "*I do not know how to instruct them to find information correctly"* (CT3). Additionally, the IL perception of librarians and teachers was explored in a range of studies, as mentioned in the literature review, such as Hepworth and Smith (2008), IDS and ITOCA (2010), V. Martin (2011), J. Smith (2013) and Tan et al. (2014). Most of them confirm the finding of this study by showing a limited understanding of the IL concept among librarians and teachers. Vietnamese teachers who took part in this research had not heard about the IL concept before participating in the study. For example, "*I had not heard about the term IL before"* (BT2) and "*as for IL or IL skills, I have never used the terms before"* (CT3). Some

of them could not provide a full explanation of the IL concept or understand the term in a different way. One of the librarians believed that: "*IL is gathering information to satisfy individuals' needs"* (CL), while the teachers said that: "*IL is information that individuals identify from the world around them"* (CT2) and "*IL is a noun that indicates a kind of knowledge"* (BT1). It was found that there were Vietnamese teachers who did not greatly appreciate the importance of IL to students, for example, "*I do not think IL significantly affects students' learning. Students who take more effort to explore information can have a better understanding of issues than those who do not do that. However, it does not help students achieve good learning results"* (BT2). Many teachers consider IL as a separate subject rather than a way of learning and teaching (D. Williams & Wavell, 2007). Bruce (1997b, p. 60) argues that "information literacy cannot be learned without engaging the discipline specific subject matter." Hence, it is necessary to help academic staff have a common understanding of IL in order to integrate IL into the curriculum (Bent, 2013). Lack of understanding of IL and the weakness of IL capability among librarians and teachers may result from the absence of IL training in librarianship courses (Weller, 2006) and teacher training courses (K. Wilson, 1997). Therefore, staff development is essential to enhance their understanding and competence of IL when implementing an IL programme (Bundy, 2004; UNESCO, 2013a).

This study shows that administrators did not highly appreciate the importance of the school library and IL to teaching and learning activities. The librarians of both schools said that: "*my current rector does not pay much attention to the library. He thinks that the library is simply a place to store books. It does not need library management software or database, etc."* (CL) and "*we have not provided any library introduction class in this academic year, because the board of rectors has not given us permission to organise such classes. In practice, they think that the library is not important, although they do not say that. For example, they are always asking us to develop a digital library, but they do not know what a digital library is"* (BL). Also, they had a limited understanding of the IL concept. The administrators who took part in this research only knew about the term IL for the first time when they participated in the research, "*I know the term "information" or "IT", but I have never heard about IL"* (CM). Thus, the implementation of IL initiatives had not received much attention from them. The literature indicates that teachers should be the person who is mainly responsible for delivering IL instructions (Bent, 2013). Nonetheless, developing information literate students is not only the responsibility of librarians or teachers (Neely,

2006a), but also "all those who call themselves educators" (Bundy, 1999, p. 242). It is suggested that administrative staff should take responsibility to manage issues surrounding planning, budget and staff development in order to ensure the success of IL initiatives (Andretta, 2005).

Poor collaboration between stakeholders, including administrators, teachers and librarians, made them be unable to understand each other's activities and what other stakeholders could support for their own work. The study found that teachers and librarians neither collaborated with the other, because teachers did not greatly appreciate the role of the library to their teaching. One of the librarian said that: *"teachers do not think about how the library can support them"* (BL). The support of administrators to the libraries and teaching activities was not as high as expected. Furthermore, mutual support among teachers remained weak, as said by one of the teachers: "*when I need help from other teachers, most of them refuse me. If I want to help my students. I will do it alone…The board of rectors also asks us to apply the project-based teaching method. However, they do not support us to do it"* (CT1). This might create challenges for the implementation of IL interventions. It is revealed that "when librarians and teachers work together, students achieve higher levels of literacy, reading, learning, problem-solving and information and communication technology skills" (UNESCO & IFLA, 1999). This view is shared by many researchers who note that stakeholders, including librarians, faculty, administrators, academic staff and other information professionals within the school, need to work collaboratively in order to impulse the success of an IL programme (Lindsay, 1976; Culley, Healy, & Cudd, 1977; UNESCO & IFLA, 1999; ACRL, 2000; Bruce, 2001; Doskatsch, 2003; Bundy, 2004; Ratteray, 2004; Moore, 2005; Andretta, 2007; K. Chu, 2009; Ali et al., 2010; IDS & ITOCA, 2010; S. Chu et al., 2011; Pickard et al., 2011; Piloiu, 2011; Price et al., 2011; SCONUL, 2011; Secker & Coonan, 2011; Wang, 2011; Wrathall, 2013; CILIP, 2014; Taylor, 2015). Furthermore, the collaboration between librarians and faculty is required to integrate IL intervention into the curriculum (K. Anderson & May, 2010). Librarians cannot assess the effectiveness of IL instructions without the support from the faculty (K. Anderson & May, 2010). On the contrary, teachers can be supported by librarians in identifying the presence of skills in the curriculum (Pickard et al., 2011). However, the important role of librarians has not been acknowledged by teachers (Rabinowitz, 2000; Doskatsch, 2003; Mokhtar & Majid, 2006), although librarians are considered an essential partner in collaborative teaching (Kuhlthau et al., 2007; S. Chu et al., 2011; Subramaniam et al., 2015). It can be seen that lack of

collaboration between stakeholders has been explored by earlier research and it is still a noticeable in the context of this research.

From what has been discussed above, it is suggested that issues surrounding staff development and collaboration should be redressed in the IL teaching model for Vietnam's upper secondary schools.

6.3.2.3.2. Finance

The study found that a lack of financial support could result in the absence of IL instructions in the two schools. Specifically, the low salary made teachers and librarians have no motivation for alternative activities. This is demonstrated in the following statements: "*some teachers persistently refused me when I asked them to do something in the school. They told me that they were too busy with their private classes and why was I forcing them to do such things when their salary was not high. Actually, a young teacher's salary is around 3 million Vietnamese Dong (VND) per month"* (BM) and "*school librarians' salary is not high, so we do not want to deliver many activities on such an income. Based on the school library assessment criteria, they mainly focus on factors, such as the number of books, computers and book exhibition activities. They do not have criteria related to IL, so why should I have to do it"* (BL). Furthermore, a lack of information sources, such as books and electronic information sources, that was a consequence of budget cuts made delivering IL instructions meet many challenges. One of the librarians said that: "*my school library receives around 10 million VND per year. It is not enough to purchase new books for students"* (BL). This finding is strengthened by research conducted by U. Dang (2012) and N. Vu et al. (2013) who demonstrated that there was a lack of financial support for Vietnam's school libraries. Similarly, other countries also face the same problem. For example, in 2010, more than four fifths of the schools in the UK faced budget cuts (Streatfield et al., 2010). Furthermore, a recent survey on the UK school libraries found that 54% of library schools were not adequately funded and 52% of school library budget had not changed from previous year (Softlink, 2015). In the context of this study, the libraries did not hold a large quantity of books and there was an absence of electronic information resources and the library management software. This might bring disadvantages in the implementation of instructions related to IL.

6.3.2.4. Students

The study found that students, in particular their awareness of IL, affected the implementation of IL programmes. As discussed in Section 6.2.1.1, not all students were aware of the role of IL to their own learning. Thus, they did not have motivation to develop their IL skills. They were not willing to attend or take part in activities that could develop their IL, as said by one of the librarians, "*as from this year, my school library will no longer organise a library introduction class because students refuse to go to the class. Students who want to read books can borrow books in the library"* (CL). One of the students states that: "*I think that if you provide an IL course to students, they will give time for private classes rather than the IL course"* (BS74). As a result, the schools in general and the libraries in particular, were not motivated to deliver activities that might be beneficial for the development of students' IL. Research indicates that school libraries create an environment that allows students to link what they learn from lessons to a broader world outside of the school (Mardis & Dickinson, 2009). Students will face many challenges in conducting research projects if they are not familiar with the library and resources (Valentine, 1993; M. Smith & Hepworth, 2007). This research is supported by many studies which reveal that students infrequently use the library and librarian-related services for their course-related research assignment (Culley et al., 1977; Head & Eisenberg, 2009; Sokoloff, 2012). In the context of this study, students rarely used the libraries for their learning. Only high scoring students used the libraries. In the literature, several reasons that result in the above problem were found. Particularly, students think library research skills are not important in professional development (Culley et al., 1977; Novotny & Cahoy, 2006). In addition, libraries are less convenient and more time-consume in locating information, as believed by students (M. Smith & Hepworth, 2007). Also, reasons, such as fear of library staff, an affective sense of incompetence, feeling uncomfortable in the library, lack of knowledge about the library and discomfort using library equipment, significantly result in library anxiety (Onwuegbuzie, Jiao, & Bostick, 2004). This research adds to the literature by indicating that lack of faith in librarians among students could result in not using the libraries. This is demonstrated in the following statement: "*I am not sure whether librarians can teach us IL or not"* (BS10 and BS55).

6.4. Summary

From what has been discussed above, it can be seen that this research does support the results of many studies in the past in terms of students' IL capability, factors affecting their

IL and teaching IL. The study also highlights noticeable issues related to IL learning and teaching activities in the two upper secondary schools in Vietnam, such as students' IL self-learning and reasons leading to the absence of IL programmes in the schools. This provides an insight into the practice of IL teaching and learning in upper secondary schools in the country. It can be seen that Vietnamese upper secondary students' IL capability is not too different in comparison with students at the same level in other countries. Also, the development of IL programmes in Vietnam's high schools faces many challenges that can be encountered across educational institutions of both developing and developed countries, such as lack of IL programmes, teaching method, lack of resources, lack of collaboration, lack of teaching capability and cognitive readiness of professionals, time pressure and lack of students' awareness of IL. Nevertheless, contextual issues surrounding the absence of IL programmes, teaching method, lacking resources and time pressure are noticeable issues in Vietnam.

CHAPTER SEVEN: CONCLUSIONS AND RECOMMENDATIONS

7.1. Summary of key findings

A summary of key findings from the study is presented in the following table.

Table 23. Key findings of the study

Criteria	Key findings
Students' IL capability	- Students' IL has not been well equipped - Students overestimated their actual IL level - Information search: using simple search techniques and the superficial use of Google - Information evaluation: the least-scored skill and spending little effort to obtain appropriate information sources - Ethical use of information: students did not obey ethical regulations although having an understanding of ethics in using information - Using English to engage with information: the behaviour of using English to engage with information has not been thoroughly shaped
Factors affecting students' IL	- Internal factors: awareness, academic capability, and IL self-learning (intrinsic motivation) - External factors: teachers, family support, teaching method, and study environment - The use of technology had no impact on students' IL
Teaching IL	- The absence of IL programmes - Reasons for a lack of IL programmes: time pressure, teaching method, resource issues (finance and human resources), and students' awareness of the importance of IL

7.2. How research objectives are addressed in the study

The literature review addresses the first research objective which aims to explore theoretical foundations of IL. The literature provides an overview of the IL concept from its inception in 1974 by Paul Zurkowski until the present time when the new concepts and new ideas emerge, for example, transliteracy (S. Thomas et al., 2007), metaliteracy (Mackey & Jacobson, 2011) and IL "as a socially enacted practice" (Lloyd, 2012, p. 772). Synergies and commonalities between IL concepts were described and analysed. Teaching and learning theories were also included in the literature review. In addition to an explanation of the transmission approach in teaching, three broad perspectives were explored, including behaviourism, constructivism and situated learning, as suggested by Mayes and de Freitas (2004, 2013) and Beetham and Sharpe (2013b). A discussion regarding the relationship between learning theory and pedagogical approaches, and

between pedagogy and IL was included in the literature review. Two well-known IB models, comprising Wilson's IB models (T. Wilson, 1999) and Kuhlthau's ISP (Kuhlthau et al., 2007), were described in the literature in order to explore the implications of IB research for IL theory. The study then selected and expanded the AASL model (AASL, 2007) as its theoretical framework.

The study investigates the IL level of Vietnamese upper secondary students in order to reach the second research objective which aims to assess the IL level of Vietnam's upper secondary students. The survey was conducted with 183 students in two upper secondary schools in HCMC, including a public and a private school. The questionnaire was developed based on TRAILS to examine students' IL in terms of developing search strategies, evaluating information sources, using information ethically and using English to engage with information effectively. Students nominated from the survey, librarians, teachers and administrators were then invited to take part in the semi-structured interviews. The results of the semi-structured interviews and the findings of the IL test were triangulated to provide an insight into students' IL capability. As a result, the study demonstrates that more work need to be done to improve students' IL.

The qualitative data from the semi-structured interviews and document review were used to provide an overall picture of teaching and learning IL in the two schools. This enables the researcher to reach the third objective which aims to identify the ways in which IL in-practice initiatives were framed for Vietnam's upper secondary students. The interview questions explored how students developed their IL and how IL instructions were delivered. In addition, the analysis of various documents, at both national and institutional level, was carried out in order to consolidate the findings of the semi-structured interviews. The research found that the absence of IL initiatives might result in students' IL self-learning. The reasons leading to the absence of IL programmes in the two schools were also explored. The study indicates that there is a need to develop IL programmes in the schools.

The study proposes a preliminary IL teaching model for Vietnam's upper secondary schools. This aims to suggest the schools an effective approach to IL teaching to students in their senior year in high school. The model recommends that the schools should thoroughly apply the project-based approach to students' learning to promote the

development of IL. Contextual issues are also addressed in the model, such as human resources and time pressure, because the schools cannot deliver IL initiatives if context-based issues are not thoroughly solved. The expanded AASL standards are also involved in the model to help the schools create IL guidelines.

7.3. A preliminary information literacy teaching model for Vietnam's upper secondary schools

There are a number of existing IL models which are developed by various individuals and organisations. However, they mainly focus on explaining what an information literate individual is rather than showing how to implement an IL programme. IL is a new concept to many of Vietnam's educators and students. It is necessary to develop an IL model which gives schools an overview about what they need to do to start teaching IL in their schools. Here the study introduces a preliminary IL teaching model for upper secondary schools in Vietnam (Figure 18). The model is intended to offer a framework for schools to design, develop and deliver IL programmes. The model addresses issues surrounding reasons leading to the absence of IL programmes and factors affecting students' IL, as discussed in the previous chapter. Additionally, the expanded AASL model that was proposed in the literature review is also included in the model.

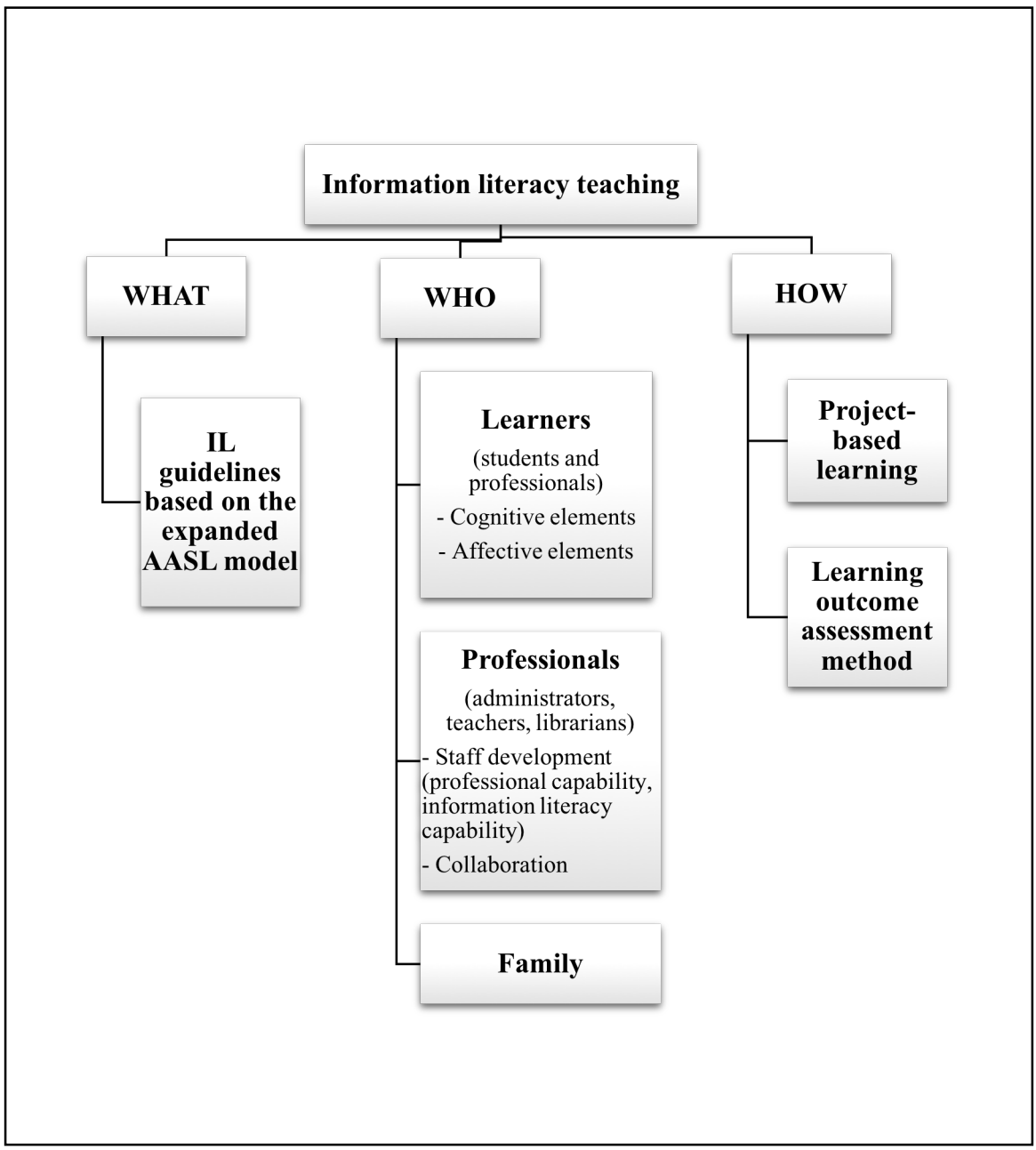


Figure 18. Information literacy teaching model for Vietnam's upper secondary schools

The first part of the model is "WHAT", this school identifies what needs to teach students regarding IL. It includes the expanded AASL model which was proposed in the literature review. The expanded AASL model contains four original standards and one additional standard. The supplementary standard, "Using foreign language to engage with information effectively", was added based on the context of the study. The standards and indicators can be used as a guideline to design IL instructions.

The second part, “WHO”, primarily concentrates on issues surrounding stakeholders, such as professionals, students and their family. As stated in the discussion chapter, cognitive (awareness, self-assessment) and affective (motivation) elements directly affect the development of IL programmes. Specifically, the study reveals that students had a lack of awareness of IL and a lack of motivation to develop their IL. Cognitive and affective elements also have a great effect on delivering IL instructions among school administrators, teachers and librarians. Thus, the two components are recommended to be an essential part of the model.

It is suggested that staff development and collaboration should receive attention of schools in order to ensure the success of IL programmes. Staff development is required to improve professionals’ IL teaching capability. The collaboration between teachers, librarians and administrators is also emphasised to ensure the long-term development of IL initiatives. Furthermore, the support from family can motivate students to develop their IL more effectively.

The third part of the model, “HOW”, indicates how to implement an IL programme. Students’ IL and IL initiatives cannot be developed effectively if the transmission approach in teaching is still used in the education system. It is suggested that schools should promote the new active learning and teaching method. The model encourages the use of the project-based learning approach which is being implemented in the education system in Vietnam. This approach should be followed by an appropriate learning outcome assessment strategy. Thoroughly employing the project-based learning approach and an appropriate learning assessment strategy may help schools solve problems related to time pressure.

7.4. Recommendations for the implementation of an information literacy programme

The study presents here recommendations for the implementation of an IL programme in Vietnam’s upper secondary schools based on the results of the research and the participants’ suggestions, as described in Section 5.3.4.

In addition to IL, there is the emergence of many other literacies, such as digital, ICT, academic, visual, media, and ‘e’ literacy. Educators, practitioners, and policy makers need

to have a thorough understanding of the IL concept to avoid confusion of IL with other literacies in order to ensure the success of IL programmes. It should be noted that the development of IL capability ensues from a broader social setting and that IL comprises three spheres, finding, evaluating and using information, and each scope activates its own set of behavioural, cognitive, metacognitive and affective elements (Walton & Cleland, 2013). IL is differently translated in Vietnamese. As discussed above (Chapter Three, Section 3.1.5), the use of the equivalent term of IL in Vietnamese "Năng lực thông tin" (information competence) is suggested to make it easy for other people, for example, team members and participants, to identify the connotation of the IL concept. Providing an explanation of the IL concept is also necessary to help other people have the same understanding of the term before embarking in implementing an IL programme.

As stated in the literature review, teaching and learning methods have a great effect on the development of IL programmes. It is suggested that educators need to gain a thorough understanding of learning and teaching theories before embarking in implementing an IL intervention in order to ensure its success. The participants also recommended that the project-based learning, which is a mode of the constructivist approach, should be thoroughly applied in Vietnam's schools as said by a librarian: *"the new teaching and learning method that focuses on the project-based learning requires students to engage with information. Therefore, if you want to develop students' IL, you should pay more attention to that teaching and learning method*" (BL). Accordingly, a more in-depth understanding of this approach in teaching is crucial to facilitate the development of the new teaching method and IL programmes in practice. The application of the IL teaching model with a limited understanding of the constructivist approach/project-based learning may appreciably reduce the effectiveness of IL initiatives.

The participants suggested that teaching IL should combine theory and practice in order to help students develop their IL more effectively. One of the teachers said that: *"IL theory should be taught together with practice. We should not mainly focus on theory"* (CS51). This view is shared by Bruce (2004) who indicates that providing students with opportunities to reflect and practice can bring many benefits for the process of becoming information literate. Similarly, CILIP (2014, p. 47) notes that "IL skills need to be revisited, developed and practised." From what has been discussed above, it is recommended that

combining theory and practice in IL teaching is necessary to ensure the effectiveness of IL interventions.

It is recommended that schools should integrate IL into the formal curriculum. This can provide students with an appropriate study environment to practice and apply IL skills. The participants believed that this could help them solve time pressure issues which were considered a challenge of the implementation of IL programmes in Vietnam's schools. An administrator said that: *"if we want to develop the new teaching and learning method, the MOET should integrate IL into the study programme"* (BM). Research shows that IL can be delivered using different pedagogical approaches, such as stand-alone course, parallel course, integrated course, and embedding (Grassian & Kaplowitz, 2001; Bundy, 2004; Ali et al., 2010; Wang, 2011). Several studies report results from stand-alone IL course (Webber & Johnston, 2000; Badke, 2008), generic course (Loo & Chung, 2006), embedding (Walton, 2009; Price et al., 2011), and integration (Haraldstad, 2002; Kobzina, 2010). However, Doskatsch (2003) suggests that IL should not be the outcome of any one subject. Researchers widely recommend that IL should be integrated into the study programme (Hepworth, 2000; Rader, 2002; Samson & Millet, 2003; Bundy, 2004; Kuhlthau, 2004; Scott & O'Sullivan, 2005; Neely & Sullivan, 2006; Ward, 2006; Andretta, 2007; Ali et al., 2010; K. Anderson & May, 2010; Samson, 2010; Carr et al., 2011; Derakhshan & Singh, 2011; SCONUL, 2011; Secker & Coonan, 2011; Rozzi-Ochs et al., 2012; Bent, 2013; Parker, 2013; Walton & Hepworth, 2013). Samson and Millet (2003, p. 93) indicate that "by integrating information literacy into the curriculum, students benefit by learning these elements not only as they relate to their research assignments but also as part of their classroom environment." Integrated courses can help learners understand IL at a deeper level (Johnston & Webber, 2003). This approach also makes IL become a mandatory element in the programme. Accordingly, students' awareness of the importance of IL may be enhanced (IDS & ITOCA, 2010). Hence, educational institutions increasingly display a tendency of integrating IL into subject areas (Virkus, 2013). IL standards are integrated into the education systems of many countries around the world, such as the US, Denmark and Hong Kong (S. Chu, 2012). The integration of IL into the formal curriculum like the above countries can enhance the effectiveness of the implementation of IL programmes in Vietnam's education system.

This research introduces a preliminary IL teaching model for Vietnam's upper secondary schools. It is suggested that the implementation of IL programmes should be followed by an IL programme assessment to examine the effectiveness of the model, as suggested by a teacher, *"after providing IL instructions, we should have an assessment or something like that as to the effectiveness of the programme"* (BT1). This will help to propose appropriate suggestions in order to modify and improve the model. Improvement is necessary, because instructions are never perfect (Gordon, 2009), and it shows efforts have been made (B. Harris, 2013).

One of the administrators recommended that a national IL policy for schools should be issued, *"the MOET needs to intervene in developing IL programmes. They need to require all schools to deliver IL programmes. They are in the process of implementing a new curriculum, but they neglect activities that are necessary to its development"* (BM). As suggested by a librarian, school libraries also should be improved in terms of librarians' professional capability and infrastructure to assist institutions in developing IL programmes, *"the library should be improved and building a digital library is needed. This can support teaching IL"* (BL). The professionals recommended that the collaboration between administrators, librarians, teachers, and students should be promoted in order to ensure the success of IL interventions. For example, a teacher said that: "*School managers, teachers and librarians need to work with each other to develop an IL programme effectively. Students also need to be involved in this*" (CT3). Based on the above recommendations, it is suggested that a triangular approach with the collaboration of the various stakeholders, including the MOET, library associations, library educators/librarian education instituions, administrators, teachers, librarians, students and their families, should be applied (Figure 19). This cooperation is the combination of a top-down IL initiative from the MOET and the contributions from other stakeholders from the bottom up. An IL intervention cannot be implemented successfully without the collaboration between stakeholders (Bundy, 1999). This will ensure the long-term and comprehensive development of IL initiatives. Regarding a national IL policy issued by the MOET, this will promote the comprehensive development of IL programmes because both Vietnam's education system and school libraries are under the management of the MOET. This view is supported by several researchers who indicate that highest authorities need to be involved in IL initiatives (Virkus & Metsar, 2004; IDS & ITOCA, 2010). Top-down initiatives can ensure the consistency between educational goals, lifelong learning policies and IL strategies (Andretta, 2005) as

well as outcomes-based education, learning resources and school libraries (Muir & Oppenheim, 2001). Thus, an IL programme delivered at national level will create a favourable environment for the development of individuals' competence (UNESCO, 2013a). On the other hand, schools and libraries need to report the results of the initiative and provide recommendations for the MOET to assist the Ministry in adjusting and managing the initiative effectively. As noted in the literature review, libraries play an important role in supporting educational institutions in the development of IL programmes (Library and Information Association of New Zealand Aotearoa, 2001; Kelley & Orr, 2003; AASL, 2007; CILIP, 2014; Jinadu & Kaur, 2014). However, this study found that the current status of Vietnam's school libraries has not yet allowed them to make contributions to the development of IL programmes. The support from the library associations (for example, Vietnamese Library Association and library associations in both the North and the South) and librarian education instituions (for example, University of Social Sciences and Humanities and University of Culture in both Hanoi and HCMC) is needed to develop and improve librarians' professional capability on the ground. The associations could provide professional advice to help librarian education institutions improve and adjust their curriculum. They could also offer additional training courses for librarians. The mutual support between librarians and teachers should be promoted to ensure that both can use their professional strengths to help students become information literate. Administrators, teachers, and students' families need to work together so that they all have the same understanding in developing students' IL capability.

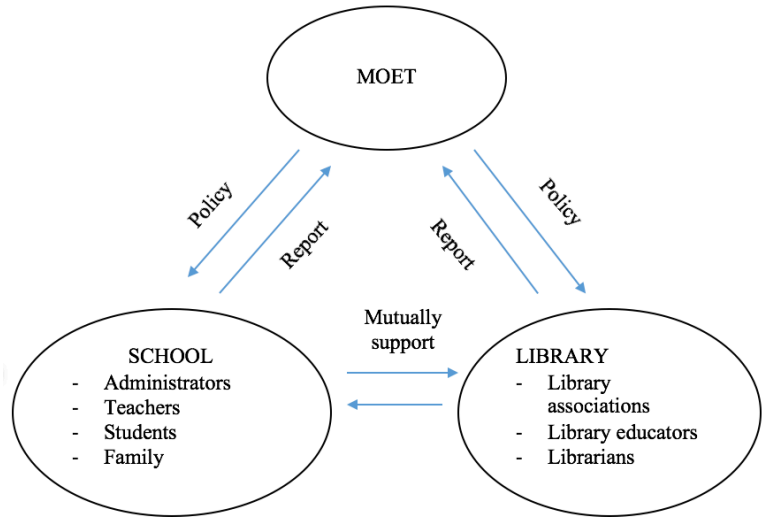


Figure 19. Stakeholders' role in the implementation of an IL initiative

The study found that the schools were faced with a lack of information resources and budget cuts. This might affect the implementation of IL programmes. Although there is no evidence from this research regarding solving financial issues in Vietnam's schools, it is assumed that financial issues are macroscopic matters that the research cannot thoroughly settle. Issues related to information resources and funding are out of control of educational institutions and the researcher. It is recommended that IL instructions can start with free information sources and online search engines.

7.5. Recommendations for future research

This research proposes a preliminary IL teaching model for Vietnam's upper secondary schools. It is necessary to conduct an experimental study which examines how the model is applied and implemented in practice. This will enable researchers to explore gaps between the practical environment and the model that have not been found in this study. As a result, the model will be modified based on results of experimental studies (if any) to make it become more appropriate.

The researcher has a keen interest in how the suggested IL model affecting students' learning in Vietnam's upper secondary schools. It is suggested that a long-term study should be conducted to explore the long-lasting impact of the model.

This research involved the participation of two upper secondary schools in Vietnam. As explained in the methodology chapter, the research population size is very large. Thus, a future study should be carried out with a larger sample to provide a more comprehensive picture of teaching and learning IL in upper secondary schools in the country.

Two out of five standards of the expanded AASL model were used to investigate students' IL capability and IL teaching and learning in the schools in terms of developing search strategies, evaluating information sources, using information ethically and using English to engage with information effectively. Future research can explore other aspects of students' IL capability and IL teaching and learning in the country using other standards/indicators of the expanded AASL model. The combination of results of this research and future studies can draw a more comprehensive picture of students' IL capability and IL teaching and learning IL in the country.

This study employed a questionnaire to measure students' IL level. Therefore, high-level thinking skills might not be explored in depth. For that reason, it is recommended that future research can examine students' high-level thinking skills by using data from other sources, for example, students' assignments.

There is an intense curiosity about the similarities and differences between teaching and learning IL in Vietnam and other countries. Hence, a cross-country research project can be carried out to compare the results of IL studies in Vietnam and the literature of IL research conducted in other countries.

Using English to engage with information has not been investigated in depth. This is the contextual difference between Vietnamese students and their peers in other countries. It is recommended that a further study which focuses on this issue should be conducted to provide an insight into the use of English to engage with information among Vietnamese students.

It is surprising to find that Grade 10 students achieved better IL scores than Grade 11 students. At the same time, higher scores in evaluating information sources were obtained by Grade 10 students. However, this research has not examined the reasons resulting in the above finding. Therefore, a further study should be conducted to explore the reasons behind this result.

This research found that there were gender gaps in IL achievement between females and males across the two schools. It is suggested that a further study should be conducted to investigate this issue in more depth in order to develop an IL intervention which can improve and enhance students' IL based on that issue.

7.6. Reflection on the study

Some ideas regarding the status of IL teaching and learning in Vietnam's upper secondary schools were established before this study was conducted. However, no statements were published due to the absence of evidence based on a specific study. This study provides evidence concerning teaching and learning IL in the two upper secondary schools in Vietnam. It firmly consolidates the findings of many earlier IL studies. This gives a boost

to the researcher's confidence in sharing statements related to teaching and learning IL in Vietnam's upper secondary schools with a wider research community.

The research covered a great deal of theory related to IL, IB, and learning and teaching theories. This is the result of a long-term literature review process in the field. Therefore, it provides an understanding of the development of the IL concept, the different perspectives and the extension of the term, the implications of IB to IL theory and the relationship between pedagogy and IL.

There are several methods which can be used to measure students' IL level as well as the status of IL teaching and learning in Vietnam's upper secondary schools. This study employed a mixed-methods multiple case study approach using different data collection techniques. There is the absence of studies which examine IL teaching and learning in Vietnam. Thus, the above approach allows the researcher to triangulate the findings of the study. Accordingly, a picture of the practice of IL teaching and learning in the schools then appeared. Furthermore, a questionnaire was used to assess students' IL level. Using data from other sources (e.g. students' assignments) allows the researcher to examine students' higher-level order thinking skills. Nevertheless, the study was carried out at a distance. In Vietnam, collecting data from other sources, for example, students' assignments, is a very big challenge. This could lead to the failure of the research. Therefore, a paper questionnaire was considered the most appropriate tool to measure students' IL. A lesson learned through this situation is that choosing the methodology greatly depends on the context of the study, because there are many factors affecting the implementation of a study, such as resources, distance and culture.

Data collection was the most challenge part of the research because of the time, distance and the commitment of the participants. The schools always gave a priority to their students' learning and time. Hence, the researcher had to chase up the participants in order to ensure the study was going on. Although this is a very serious challenge task, it can complete successfully if researchers help participants understand their contribution and create the best conditions for them to participate in the study.

During the data analysis process, an unexpected finding was found. Particularly, the study reveals that Grade 10 students achieved higher scores in evaluating information than Grade

11 and Grade 12 students. However, this study could not find out the reason behind this result. Therefore, this finding needs to be explored further.

Although the research generates a great deal of interesting findings and discussion as well as make several contributions to both theory and practice, there are a number of existing limitations, as follows.

The research aims to investigate the practice of IL teaching and learning in Vietnam's upper secondary schools. However, the study could not gather data from all upper secondary schools in Vietnam since the research population size is very large. For that reason, two Vietnamese upper secondary schools were selected to participate in the research as representative sample. The number of two schools in comparison with more than 2,000 schools of the population is too small. Nevertheless, the research could not include more, because there were some issues confronting the study, such as distance, lack of funding, resources and time.

The IL assessment mainly concentrated on four IL components: developing search strategies, evaluating information sources, using information ethically and using English to engage with information effectively. The questionnaire used two out of five standards of the expanded AASL model (AASL, 2007), "Inquire, think critically, and gain knowledge" and "Use foreign language to engage with information effectively", to measure students' IL level. Other IL aspects and the three remaining standards have not been investigated in the study. This resulted from lacking funding, resources and time.

The IL assessment was conducted in two Vietnam's upper secondary schools using a multiple-choice questionnaire. There is a widespread belief that this assessment tool primarily focuses on lower-level skills rather than higher-level thinking skills (Scharf et al., 2007; Oakleaf, 2008; McCulley, 2009; Walsh, 2009; Scharf, 2013; Walton & Hepworth, 2013). However, in this study, this was an appropriate method to assess students' IL because of lacking time and the schools' unwillingness to allow the researcher to collect data presented through students' assignments and performance test.

The researcher made every effort to develop the questionnaire under the suggestions of the professional group. However, it is assumed the questionnaire needs to be improved.

Although the Cronbach's α reliability coefficient of IL assessment items felt into an acceptable level of 0.65, this number was not as high as expected.

The IL self-assessment principally required students to self-rate their overall IL and the four IL components: developing search strategies, evaluating information sources, using information ethically and using English to engage with information effectively. Skills of specific techniques have not self-estimated by students.

The research measured students' IL at three study levels, Grade 10, 11 and 12. It was suggested that three groups of the students should use separate questionnaires in order to ensure students answer questions in line with their IL capability. Nonetheless, this research did not prepare different questionnaires, because it wanted to explore how different groups of students solve the same issue. Pickard et al. (2014) note that using the same questionnaire may help researchers straightforwardly compare results between age groups.

It is assumed that less effort was spent to investigate students' using English to engage with information. Consequently, this skill has not been examined in depth in this study.

7.7. Summary

This study started with the aim of introducing an appropriate IL teaching model for the secondary education setting in Vietnam through investigating the practice of IL teaching and learning in upper secondary schools in the country. Through both the pilot and the main study, a rich picture of IL education in Vietnam's upper secondary schools and its implications could be revealed. School students' IL has not been well developed and this could be the result of the absence of IL programmes in the schools.

More work needs to be done to improve Vietnamese school students' IL capability and IL education in the country. This study introduced an IL teaching model for Vietnam's upper secondary schools. It emphasises applying the expanded AASL model, promoting the implementation of a new teaching method, and enhancing the role of stakeholders. The study also suggests a triangular approach with the collaboration of stakeholders to ensure the success of a nationwide IL programme.

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APPENDIX

Appendix 1. Information literacy models

1. The Big6 skills model of information problem-solving

1. Task definition:
    1.1. Define the problem.
    1.2. Identify the information requirements of the problem.

2. Information seeking strategies:
    2.1. Determine the range of possible sources.
    2.2. Evaluate the different possible sources to determine priorities.

3. Location and access:
    3.1. Locate sources (intellectually and physically).
    3.2. Find information within sources.

4. Use of information:
    4.1. Engage (e.g., read, hear, view) the information in a source.
    4.2. Extract information from a source.

5. Synthesis:
    5.1. Organize information from multiple sources.
    5.2. Present information.

6. Evaluation:
    6.1. Judge the product (effectiveness).
    6.2. Judge the information problem-solving process (efficiency).

2. Information literacy standards for student learning

Information Literacy Standards

Standard 1: The student who is information literate accesses information efficiently and effectively.

The student who is information literate recognizes that having good information is central to meeting the opportunities and challenges of day-to-day living. That student knows when to seek information beyond his or her personal knowledge, how to frame questions that will lead to the appropriate information, and where to seek that information. The student knows how to structure a search across a variety of sources and formats to locate the best information to meet a particular need.

Indicators

Indicator 1. Recognizes the need for information

Indicator 2. Recognizes that accurate and comprehensive information is the basis for intelligent decision making

Indicator 3. Formulates questions based on information needs

Indicator 4. Identifies a variety of potential sources of information

Indicator 5. Develops and uses successful strategies for locating information

Standard 2: The student who is information literate evaluates information critically and competently.

The student who is information literate weighs information care- fully and wisely to determine its quality. That student understands traditional and emerging principles for assessing the accuracy, validity, relevance, completeness, and impartiality of information. The student applies these principles insightfully across information sources and formats and uses logic and informed judgment to accept, reject, or replace information to meet a particular need.

Indicators

Indicator 1. Determines accuracy, relevance, and comprehensiveness

Indicator 2. Distinguishes among fact, point of view, and opinion

Indicator 3. Identifies inaccurate and misleading information

Indicator 4. Selects information appropriate to the problem or question at hand

Standard 3: The student who is information literate uses information accurately and creatively.

The student who is information literate manages information skill- fully and effectively in a variety of contexts. That student organizes and integrates information from a range of sources and formats in order to apply it to decision making, problem solving, critical thinking, and creative expression. The student communicates information and ideas for a variety of purposes, both scholarly and creative; to a range of audiences, both in school and beyond; and in print, nonprint, and electronic formats. This Standard promotes the design and execution of authentic products that involve critical and creative thinking and that reflect real world situations. The indicators under this Standard therefore deviate from the traditional definition of use. Rather than suggesting that students simply insert researched information into a perfunctory product, the indicators emphasize the thinking processes involved when students use information to draw conclusions and develop new understandings.

Indicators

Indicator 1: Organizes information for practical application

Indicator 2: Integrates new information into one's own knowledge

Indicator 3: Applies information in critical thinking and problem solving.

Indicator 4: Produces and communicates information and ideas in appropriate formats

Independent Learning Standards

Standard 4: The student who is an independent learner is information literate and pursues information related to personal interests.

The student who is an independent learner applies the principles of information literacy to access, evaluate, and use information about issues and situations of personal interest. That student actively and independently seeks information to enrich understanding of career, community, health, leisure, and other personal situations. The student constructs meaningful personal knowledge based on that information and communicates that knowledge accurately and creatively across the range of information formats.

Indicators

Indicator 1. Seeks information related to various dimensions of personal well-being, such as career interests, community involvement, health matters, and recreational pursuits

Indicator 2. Designs, develops, and evaluates information products and solutions related to personal interests

Standard 5: The student who is an independent learner is information literate and appreciates literature and other creative expressions of information.

The student who is an independent learner applies the principles of information literacy to access, evaluate, enjoy, value, and create artistic products. That student actively and independently seeks to master the principles, conventions, and criteria of literature in print, nonprint, and electronic formats. The student is able both to under- stand and enjoy creative works presented in all formats and to create products that capitalize on each format's particular strengths.

Indicators

Indicator 1. Is a competent and self-motivated reader

Indicator 2. Derives meaning from information presented creatively in a variety of formats

Indicator 3. Develops creative products in a variety of formats

Standard 6: The student who is an independent learner is information literate and strives for excellence in information seeking and knowledge generation.

The student who is an independent learner applies the principles of information literacy to evaluate and use his or her own information processes and products as well as those developed by others. That student actively and independently reflects on and critiques personal thought processes and individually created information products. The student recognizes when these efforts are successful and unsuccessful and develops strategies for revising and improving them in light of changing information.

Indicators

Indicator 1. Assesses the quality of the process and products of personal information seeking

Indicator 2. Devises strategies for revising, improving, and updating self-generated knowledge

Social Responsibility Standards

Standard 7: The student who contributes positively to the learning community and to society is information literate and recognizes the importance of information to a democratic society.

The student who is socially responsible with regard to information understands that access to information is basic to the functioning of a democracy. That student seeks out information from a diversity of viewpoints, scholarly traditions, and cultural perspectives in an attempt to arrive at a reasoned and informed understanding of issues. The student realizes that equitable access to information from a range of sources and in all formats is a fundamental right in a democracy.

Indicators

Indicator 1. Seeks information from diverse sources, contexts, disciplines, and cultures

Indicator 2. Respects the principle of equitable access to information

Standard 8: The student who contributes positively to the learning community and to society is information literate and practices ethical behavior in regard to information and information technology.

The student who is socially responsible with regard to information applies principles and practices that reflect high ethical standards for accessing, evaluating, and using information. That student recognizes the importance of equitable access to information in a democratic society and respects the principles of intellectual freedom and the rights of producers of intellectual property. The student applies these principles across the range of information formats print, nonprint, and electronic.

Indicators

Indicator 1. Respects the principles of intellectual freedom

Indicator 2. Respects intellectual property rights

Indicator 3. Uses information technology responsibly

Standard 9: The student who contributes positively to the learning community and to society is information literate and participates effectively in groups to pursue and generate information.

The student who is socially responsible with regard to information works successfully both locally and through the variety of technologies that link the learning community to access, evaluate, and use information. That student seeks and shares information and ideas across a range of sources and perspectives and acknowledges the insights and contributions of a variety of cultures and disciplines. The student collaborates with diverse individuals to identify information problems, to seek their solutions, and to communicate these solutions accurately and creatively.

Indicators

Indicator 1. Shares knowledge and information with others

Indicator 2. Respects others' ideas and backgrounds and acknowledges their contributions

Indicator 3. Collaborates with others, both in person and through technologies, to identify information problems and to seek their solutions

Indicator 4. Collaborates with others, both in person and through technologies, to design, develop, and evaluate information products and solutions

3. Standards for the 21st-century learner

Common Beliefs

1. Reading is the window to the world

Reading is a foundational skill for learning, personal growth, and enjoyment. e degree to which students can read and understand text in all formats (e.g., picture, video, print) and all contexts is a key indicator of success in school and in life. As a lifelong learning skill, reading goes beyond decoding and comprehension to interpretation and development of new understandings.

2. Inquiry provides framework for learning

To become independent learners, students must gain not only the skills but also the disposition to use those skills, along with an understanding of their own responsibilities and self-assessment strategies. Combined, these four elements build a learner who can thrive in a complex information environment.

3. Ethical behavior in the use of information must be taught

In this increasingly global world of information, students must be taught to seek diverse perspectives, gather and use information ethically, and use social tools responsibly and safely.

4. Technology skills are crucial for future employment needs

Today's students need to develop information skills that will enable them to use technology as an important tool for learning, both now and in the future.

5. Equitable access is a key component for education

All children deserve equitable access to books and reading, to information, and to information technology in an environment that is safe and conducive to learning.

6. The definition of information literacy has become more complex as resources and technologies have changed

Information literacy has progressed from the simple definition of using reference resources to find information. Multiple literacies, including digital, visual, textual, and technological, have now joined information literacy as crucial skills for this century.

7. The continuing expansion of information demands that all individuals acquire the thinking skills that will enable them to learn on their own.

The amount of information available to our learners necessitates that each individual acquires the skills to select, evaluate, and use information appropriately and effectively.

8. Learning has a social context

Learning is enhanced by opportunities to share and learn with others. Students need to develop skills in sharing knowledge and learning with others, both in face-to-face situations and through technology.

9. School libraries are essential to the development of learning skills.

School libraries provide equitable physical and intellectual access to the resources and tools required for learning in a warm, stimulating, and safe environment. School librarians collaborate with others to provide instruction, learning strategies, and practice in using the essential learning skills needed in the 21st century.

Learners use skills, resources, & tools to:

STANDARD 1: Inquire, think critically, and gain knowledge

STRAND 1.1. SKILLS

Indicator 1.1.1: Follow an inquiry-based process in seeking knowledge in curricular subjects, and make the real-world connection for using this process in own life.

Indicator 1.1.2: Use prior and background knowledge as context for new learning.

Indicator 1.1.3: Develop and refine a range of questions to frame the search for new understanding.

Indicator 1.1.4: Find, evaluate, and select appropriate sources to answer questions.

Indicator 1.1.5: Evaluate information found in selected sources on the basis of accuracy, validity, appropriateness for needs, importance, and social and cultural context

Indicator 1.1.6: Read, view, and listen for information presented in any format (e.g., textual, visual, media, digital) in order to make inferences and gather meaning

Indicator 1.1.7: Make sense of information gathered from diverse sources by identifying misconceptions, main and supporting ideas, conflicting information, and point of view or bias.

Indicator 1.1.8: Demonstrate mastery of technology tools for accessing information and pursuing inquiry.

Indicator 1.1.9: Collaborate with others to broaden and deepen understanding.

STRAND 1.2. DISPOSITIONS IN ACTION

Indicator 1.2.1: Display initiative and engagement by posing questions and investigating the answers beyond the collection of superficial facts

Indicator 1.2.2: Demonstrate confidence and self-direction by making independent choices in the selection of resources and information.

Indicator 1.2.3: Demonstrate creativity by using multiple resources and formats.

Indicator 1.2.4: Maintain a critical stance by questioning the validity and accuracy of all information.

Indicator 1.2.5: Demonstrate adaptability by changing the inquiry focus, questions, resources, or strategies when necessary to achieve success.

Indicator 1.2.6: Display emotional resilience by persisting in information searching despite challenges.

Indicator 1.2.7: Display persistence by continuing to pursue information to gain a broad perspective.

STRAND 1.3. RESPONSIBILITIES

Indicator 1.3.1: Respect copyright/intellectual property rights of creators and producers.

Indicator 1.3.2: Seek divergent perspectives during information gathering and assessment.

Indicator 1.3.3: Follow ethical and legal guidelines in gathering and using information.

Indicator 1.3.4: Contribute to the exchange of ideas within the learning community.

Indicator 1.3.5: Use information technology responsibly.

STRAND 1.4. SELF-ASSESSMENT STRATEGIES

Indicator 1.4.1: Monitor own information-seeking processes for effectiveness and progress, and adapt as necessary

Indicator 1.4.2: Use interaction with and feedback from teachers and peers to guide own inquiry process

Indicator 1.4.3: Monitor gathered information, and assess for gaps or weaknesses

Indicator 1.4.4: Seek appropriate help when it is needed

STANDARD 2: Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge

STRAND 2.1. SKILLS

Indicator 2.1.1: Continue an inquiry-based research process by applying critical thinking skills (analysis, synthesis, evaluation, organisation) to information and knowledge in order to construct new understandings, draw conclusions, and create new knowledge.

Indicator 2.1.2: Organise knowledge so that it is useful.

Indicator 2.1.3: Use strategies to draw conclusions from information and apply knowledge to curricular areas, real-world situations, and further investigations.

Indicator 2.1.4: Use technology and other information tools to analyse and organize information.

Indicator 2.1.5: Collaborate with others to exchange ideas, develop new understandings, make decisions, and solve problems.

Indicator 2.1.6: Use the writing process, media and visual literacy, and technology skills to create products that express new understandings.

STRAND 2.2. DISPOSITIONS IN ACTION

Indicator 2.2.1: Demonstrate flexibility in the use of resources by adapting information strategies to each specific resource and by seeking additional resources when clear conclusions cannot be drawn.

Indicator 2.2.2: Use both divergent and convergent thinking to formulate alternative conclusions and test them against the evidence.

Indicator 2.2.3: Employ a critical stance in drawing conclusions by demonstrating that the pattern of evidence leads to a decision or conclusion.

Indicator 2.2.4: Demonstrate personal productivity by completing products to express learning.

STRAND 2.3. RESPONSIBILITIES

Indicator 2.3.1: Connect understanding to the real world.

Indicator 2.3.2: Consider diverse and global perspectives in drawing conclusions.

Indicator 2.3.3: Use valid information and reasoned conclusions to make ethical decisions.

STRAND 2.4. SELF-ASSESSMENT STRATEGIES

Indicator 2.4.1: Determine how to act on information (accept, reject, modify)

Indicator 2.4.2: Reflect on systematic process, and assess for completeness of investigation

Indicator 2.4.3: Recognise new knowledge and understanding

Indicator 2.4.4.: Develop directions for future investigations

STANDARD 3: Share knowledge and participate ethically and productively as members of our democratic society

STRAND 3.1. SKILLS

Indicator 3.1.1: Conclude an inquiry-based research process by sharing new understandings and reflecting on the learning.

Indicator 3.1.2: Participate and collaborate as members of a social and intellectual network of learners.

Indicator 3.1.3: Use writing and speaking skills to communicate new understandings effectively.

Indicator 3.1.4: Use technology and other information tools to organise and display knowledge and understanding in ways that others can view, use, and assess.

Indicator 3.1.5: Connect learning to community issues.

Indicator 3.1.6: Use information and technology ethically and responsibly.

STRAND 3.2. DISPOSITIONS IN ACTION

Indicator 3.2.1: Demonstrate leadership and confidence by presenting ideas to others in both formal and informal situations.

Indicator 3.2.2: Show social responsibility by participating actively with others in learning situations and by contributing questions and ideas during group discussions.

Indicator 3.2.3: Demonstrate teamwork by working productively with others.

STRAND 3.3. RESPONSIBILITIES

Indicator 3.3.1: Solicit and respect diverse perspectives while searching for information, collaborating with others, and participating as a member of the community.

Indicator 3.3.2: Respect the differing interests and experiences of others, and seek a variety of viewpoints.

Indicator 3.3.3: Use knowledge and information skills and dispositions to engage in public conversation and debate around issues of common concern.

Indicator 3.3.4: Create products that apply to authentic, real-world contexts.

Indicator 3.3.5: Contribute to the exchange of ideas within and beyond the learning community.

Indicator 3.3.6: Use information and knowledge in the service of democratic values.

Indicator 3.3.7: Respect the principles of intellectual freedom.

STRAND 3.4. SELF-ASSESSMENT STRATEGIES

Indicator 3.4.1: Assess the processes by which learning was achieved in order to revise strategies and learn more effectively in the future

Indicator 3.4.2: Assess the quality and effectiveness of the learning product

Indicator 3.4.3: Assess own ability to work with others in a group setting by evaluating varied roles, leadership, and demonstrations of respect for other viewpoints.

STANDARD 4: Pursue personal and aesthetic growth

STRAND 4.1. SKILLS

Indicator 4.1.1: Read, view, and listen for pleasure and personal growth.

Indicator 4.1.2: Read widely and fluently to make connections with self, the world, and previous reading.

Indicator 4.1.3: Respond to literature and creative expressions of ideas in various formats and genres.

Indicator 4.1.4: Seek information for personal learning in a variety of formats and genres.

Indicator 4.1.5: Connect ideas to own interests and previous knowledge and experience.

Indicator 4.1.6: Organize personal knowledge in a way that can be called upon easily.

Indicator 4.1.7: Use social networks and information tools to gather and share information.

Indicator 4.1.8: Use creative and artistic formats to express personal learning.

STRAND 4.2. DISPOSITIONS IN ACTION

Indicator 4.2.1: Display curiosity by pursuing interests through multiple resources.

Indicator 4.2.2: Demonstrate motivation by seeking information to answer personal questions and interests, trying a variety of formats and genres, and displaying a willingness to go beyond academic requirements.

Indicator 4.2.3: Maintain openness to new ideas by considering divergent opinions, changing opinions or conclusions when evidence supports the change, and seeking information about new ideas encountered through academic or personal experiences.

Indicator 4.2.4: Show an appreciation for literature by electing to read for pleasure and expressing an interest in various literary genres.

STRAND 4.3. RESPONSIBILITIES

Indicator 4.3.1: Participate in the social exchange of ideas, both electronically and in person.

Indicator 4.3.2: Recognise that resources are created for a variety of purposes.

Indicator 4.3.3: Seek opportunities for pursuing personal and aesthetic growth.

Indicator 4.3.4: Practice safe and ethical behaviours in personal electronic communication and interaction.

STRAND 4.4. SELF-ASSESSMENT STRATEGIES

Indicator 4.4.1 Identify own areas of interest.

Indicator 4.4.2 Recognize the limits of own personal knowledge.

Indicator 4.4.3 Recognize how to focus efforts in personal learning.

Indicator 4.4.4 Interpret new information based on cultural and social context

Indicator 4.4.5 Develop personal criteria for gauging how effectively own ideas are expressed.

Indicator 4.4.6 Evaluate own ability to select resources that are engaging and appropriate for personal interests and needs.

SKILLS: Key abilities needed for understanding, learning, thinking, and mastering subjects.

Key question: Does the student have the right proficiencies to explore a topic or subject further?

DISPOSITIONS IN ACTION: Ongoing beliefs and attitudes that guide thinking and intellectual behavior that can be measured through actions taken.

Key question: Is the student disposed to higher-level thinking and actively engaged in critical thinking to gain and share knowledge?

RESPONSIBILITIES: Common behaviors used by independent learners in researching, investigating, and problem solving.

Key question: Is the student aware that the foundational traits for 21st-century learning require self-accountability that extends beyond skills and dispositions?

SELF-ASSESSMENT STRATEGIES: Reflections on one's own learning to determine that the skills, dispositions, and responsibilities are effective.

***Key question*:** Can the student recognize personal strengths and weaknesses over time and become a stronger, more independent learner?

4. Information literacy competency standards for higher education

Information Literacy Defined

Information literacy is a set of abilities requiring individuals to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information." [1] Information literacy also is increasingly important in the contemporary environment of rapid technological change and proliferating information resources. Because of the escalating complexity of this environment, individuals are faced with diverse, abundant information choices--in their academic studies, in the workplace, and in their personal lives. Information is available through libraries, community resources, special interest organizations, media, and the Internet--and increasingly, information comes to individuals in unfiltered formats, raising questions about its authenticity, validity, and reliability. In addition, information is available through multiple media, including graphical, aural, and textual, and these pose new challenges for individuals in evaluating and understanding it. The uncertain quality and expanding quantity of information pose large challenges for society. The sheer abundance of information will not in itself create a more informed citizenry without a complementary cluster of abilities necessary to use information effectively.

Information literacy forms the basis for lifelong learning. It is common to all disciplines, to all learning environments, and to all levels of education. It enables learners to master content and extend their investigations, become more self-directed, and assume greater control over their own learning. An information literate individual is able to:

- Determine the extent of information needed
- Access the needed information effectively and efficiently
- Evaluate information and its sources critically
- Incorporate selected information into one's knowledge base
- Use information effectively to accomplish a specific purpose
- Understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally

Information Literacy and Information Technology

Information literacy is related to information technology skills, but has broader implications for the individual, the educational system, and for society. Information technology skills enable an individual to use computers, software applications, databases,

and other technologies to achieve a wide variety of academic, work-related, and personal goals. Information literate individuals necessarily develop some technology skills.

Information literacy, while showing significant overlap with information technology skills, is a distinct and broader area of competence. Increasingly, information technology skills are interwoven with, and support, information literacy. A 1999 report from the National Research Council promotes the concept of "fluency" with information technology and delineates several distinctions useful in understanding relationships among information literacy, computer literacy, and broader technological competence. The report notes that "computer literacy" is concerned with rote learning of specific hardware and software applications, while "fluency with technology" focuses on understanding the underlying concepts of technology and applying problem-solving and critical thinking to using technology. The report also discusses differences between information technology fluency and information literacy as it is understood in K-12 and higher education. Among these are information literacy's focus on content, communication, analysis, information searching, and evaluation; whereas information technology "fluency" focuses on a deep understanding of technology and graduated, increasingly skilled use of it. [2]

"Fluency" with information technology may require more intellectual abilities than the rote learning of software and hardware associated with "computer literacy", but the focus is still on the technology itself. Information literacy, on the other hand, is an intellectual framework for understanding, finding, evaluating, and using information--activities which may be accomplished in part by fluency with information technology, in part by sound investigative methods, but most important, through critical discernment and reasoning. Information literacy initiates, sustains, and extends lifelong learning through abilities which may use technologies but are ultimately independent of them.

Information Literacy and Higher Education

Developing lifelong learners is central to the mission of higher education institutions. By ensuring that individuals have the intellectual abilities of reasoning and critical thinking, and by helping them construct a framework for learning how to learn, colleges and universities provide the foundation for continued growth throughout their careers, as well as in their roles as informed citizens and members of communities. Information literacy is a key component of, and contributor to, lifelong learning. Information literacy competency extends learning beyond formal classroom settings and provides practice with self-directed investigations as individuals move into internships, first professional positions, and

increasing responsibilities in all arenas of life. Because information literacy augments students' competency with evaluating, managing, and using information, it is now considered by several regional and discipline-based accreditation associations as a key outcome for college students. [3]

For students not on traditional campuses, information resources are often available through networks and other channels, and distributed learning technologies permit teaching and learning to occur when the teacher and the student are not in the same place at the same time. The challenge for those promoting information literacy in distance education courses is to develop a comparable range of experiences in learning about information resources as are offered on traditional campuses. Information literacy competencies for distance learning students should be comparable to those for "on campus" students.

Incorporating information literacy across curricula, in all programs and services, and throughout the administrative life of the university, requires the collaborative efforts of faculty, librarians, and administrators. Through lectures and by leading discussions, faculty establish the context for learning. Faculty also inspire students to explore the unknown, offer guidance on how best to fulfill information needs, and monitor students' progress. Academic librarians coordinate the evaluation and selection of intellectual resources for programs and services; organize, and maintain collections and many points of access to information; and provide instruction to students and faculty who seek information. Administrators create opportunities for collaboration and staff development among faculty, librarians, and other professionals who initiate information literacy programs, lead in planning and budgeting for those programs, and provide ongoing resources to sustain them.

Information Literacy and Pedagogy

The Boyer Commission Report, *Reinventing Undergraduate Education*, recommends strategies that require the student to engage actively in "framing of a significant question or set of questions, the research or creative exploration to find answers, and the communications skills to convey the results..." [4] Courses structured in such a way create student-centered learning environments where inquiry is the norm, problem solving becomes the focus, and thinking critically is part of the process. Such learning environments require information literacy competencies.

Gaining skills in information literacy multiplies the opportunities for students' self-directed learning, as they become engaged in using a wide variety of information sources

to expand their knowledge, ask informed questions, and sharpen their critical thinking for still further self-directed learning. Achieving competency in information literacy requires an understanding that this cluster of abilities is not extraneous to the curriculum but is woven into the curriculum's content, structure, and sequence. This curricular integration also affords many possibilities for furthering the influence and impact of such student-centered teaching methods as problem-based learning, evidence-based learning, and inquiry learning. Guided by faculty and others in problem-based approaches, students reason about course content at a deeper level than is possible through the exclusive use of lectures and textbooks. To take fullest advantage of problem-based learning, students must often use thinking skills requiring them to become skilled users of information sources in many locations and formats, thereby increasing their responsibility for their own learning.

To obtain the information they seek for their investigations, individuals have many options. One is to utilize an information retrieval system, such as may be found in a library or in databases accessible by computer from any location. Another option is to select an appropriate investigative method for observing phenomena directly. For example, physicians, archaeologists, and astronomers frequently depend upon physical examination to detect the presence of particular phenomena. In addition, mathematicians, chemists, and physicists often utilize technologies such as statistical software or simulators to create artificial conditions in which to observe and analyze the interaction of phenomena. As students progress through their undergraduate years and graduate programs, they need to have repeated opportunities for seeking, evaluating, and managing information gathered from multiple sources and discipline-specific research methods.

Use of the Standards

Information Literacy Competency Standards for Higher Education provides a framework for assessing the information literate individual. It also extends the work of the American Association of School Librarians Task Force on Information Literacy Standards, thereby providing higher education an opportunity to articulate its information literacy competencies with those of K-12 so that a continuum of expectations develops for students at all levels. The competencies presented here outline the process by which faculty, librarians and others pinpoint specific indicators that identify a student as information literate.

Students also will find the competencies useful, because they provide students with a framework for gaining control over how they interact with information in their

environment. It will help to sensitize them to the need to develop a metacognitive approach to learning, making them conscious of the explicit actions required for gathering, analyzing, and using information. All students are expected to demonstrate all of the competencies described in this document, but not everyone will demonstrate them to the same level of proficiency or at the same speed.

Furthermore, some disciplines may place greater emphasis on the mastery of competencies at certain points in the process, and therefore certain competencies would receive greater weight than others in any rubric for measurement. Many of the competencies are likely to be performed recursively, in that the reflective and evaluative aspects included within each standard will require the student to return to an earlier point in the process, revise the information-seeking approach, and repeat the same steps.

To implement the standards fully, an institution should first review its mission and educational goals to determine how information literacy would improve learning and enhance the institution's effectiveness. To facilitate acceptance of the concept, faculty and staff development is also crucial.

Information Literacy and Assessment

In the following competencies, there are five standards and twenty-two performance indicators. The standards focus upon the needs of students in higher education at all levels. The standards also list a range of outcomes for assessing student progress toward information literacy. These outcomes serve as guidelines for faculty, librarians, and others in developing local methods for measuring student learning in the context of an institution's unique mission. In addition to assessing all students' basic information literacy skills, faculty and librarians should also work together to develop assessment instruments and strategies in the context of particular disciplines, as information literacy manifests itself in the specific understanding of the knowledge creation, scholarly activity, and publication processes found in those disciplines.

In implementing these standards, institutions need to recognize that different levels of thinking skills are associated with various learning outcomes--and therefore different instruments or methods are essential to assess those outcomes. For example, both "higher order" and "lower order" thinking skills, based on Bloom's Taxonomy of Educational Objectives, are evident throughout the outcomes detailed in this document. It is strongly suggested that assessment methods appropriate to the thinking skills associated with each outcome be identified as an integral part of the institution's implementation plan.

For example, the following outcomes illustrate "higher order" and "lower order" thinking skills:

"Lower Order" thinking skill:

Outcome 2.2.2. Identifies keywords, synonyms, and related terms for the information needed.

"Higher Order" thinking skill:

Outcome 3.3.2. Extends initial synthesis, when possible, to a higher level of abstraction to construct new hypotheses that may require additional information.

Faculty, librarians, and others will find that discussing assessment methods collaboratively is a very productive exercise in planning a systematic, comprehensive information literacy program. This assessment program should reach all students, pinpoint areas for further program development, and consolidate learning goals already achieved. It also should make explicit to the institution's constituencies how information literacy contributes to producing educated students and citizens.

Notes

1 American Library Association. Presidential Committee on Information Literacy. Final Report.(Chicago: American Library Association, 1989.)

2 National Research Council.Commission on Physical Sciences, Mathematics, and Applications. Committee on Information Technology Literacy, Computer Science and Telecommunications Board. *Being Fluent with Information Technology*. Publication. (Washington, D.C.: National Academy Press, 1999) http://www.nap.edu/catalog/6482.html

3 Several key accrediting agencies concerned with information literacy are: The Middle States Commission on Higher Education (MSCHE), the Western Association of Schools and College (WASC), and the Southern Association of Colleges and Schools (SACS).

4 Boyer Commission on Educating Undergraduates in the Research University. *Reinventing Undergraduate Education: A Blueprint for America's Research Universities*. http://notes.cc.sunysb.edu/Pres/boyer.nsf/

Standards, Performance Indicators, and Outcomes

Standard One

The information literate student determines the nature and extent of the information needed.

Performance Indicators:

1. The information literate student defines and articulates the need for information.

Outcomes Include:

a. Confers with instructors and participates in class discussions, peer workgroups, and electronic discussions to identify a research topic, or other information need
b. Develops a thesis statement and formulates questions based on the information need
c. Explores general information sources to increase familiarity with the topic
d. Defines or modifies the information need to achieve a manageable focus
e. Identifies key concepts and terms that describe the information need
f. Recognizes that existing information can be combined with original thought, experimentation, and/or analysis to produce new information

2. The information literate student identifies a variety of types and formats of potential sources for information.

Outcomes Include:

a. Knows how information is formally and informally produced, organized, and disseminated
b. Recognizes that knowledge can be organized into disciplines that influence the way information is accessed
c. Identifies the value and differences of potential resources in a variety of formats (e.g., multimedia, database, website, data set, audio/visual, book)
d. Identifies the purpose and audience of potential resources (e.g., popular vs. scholarly, current vs. historical)
e. Differentiates between primary and secondary sources, recognizing how their use and importance vary with each discipline
f. Realizes that information may need to be constructed with raw data from primary sources

3. The information literate student considers the costs and benefits of acquiring the needed information.

Outcomes Include:

a. Determines the availability of needed information and makes decisions on broadening the information seeking process beyond local resources (e.g., interlibrary loan; using resources at other locations; obtaining images, videos, text, or sound)

b. Considers the feasibility of acquiring a new language or skill (e.g., foreign or discipline-based) in order to gather needed information and to understand its context

c. Defines a realistic overall plan and timeline to acquire the needed information

4. The information literate student reevaluates the nature and extent of the information need.

Outcomes Include:

a. Reviews the initial information need to clarify, revise, or refine the question

b. Describes criteria used to make information decisions and choices

Standard Two

The information literate student accesses needed information effectively and efficiently.

Performance Indicators:

1. The information literate student selects the most appropriate investigative methods or information retrieval systems for accessing the needed information.

Outcomes Include:

a. Identifies appropriate investigative methods (e.g., laboratory experiment, simulation, fieldwork)

b. Investigates benefits and applicability of various investigative methods

c. Investigates the scope, content, and organization of information retrieval systems

d. Selects efficient and effective approaches for accessing the information needed from the investigative method or information retrieval system

2. The information literate student constructs and implements effectively-designed search strategies.

Outcomes Include:

a. Develops a research plan appropriate to the investigative method

b. Identifies keywords, synonyms and related terms for the information needed

c. Selects controlled vocabulary specific to the discipline or information retrieval source

d. Constructs a search strategy using appropriate commands for the information retrieval system selected (e.g., Boolean operators, truncation, and proximity for search engines; internal organizers such as indexes for books)

e. Implements the search strategy in various information retrieval systems using different user interfaces and search engines, with different command languages, protocols, and search parameters

f. Implements the search using investigative protocols appropriate to the discipline

3. The information literate student retrieves information online or in person using a variety of methods.

Outcomes Include:

a. Uses various search systems to retrieve information in a variety of formats

b. Uses various classification schemes and other systems (e.g., call number systems or indexes) to locate information resources within the library or to identify specific sites for physical exploration

c. Uses specialized online or in person services available at the institution to retrieve information needed (e.g., interlibrary loan/document delivery, professional associations, institutional research offices, community resources, experts and practitioners)

d. Uses surveys, letters, interviews, and other forms of inquiry to retrieve primary information

4. The information literate student refines the search strategy if necessary.

Outcomes Include:

a. Assesses the quantity, quality, and relevance of the search results to determine whether alternative information retrieval systems or investigative methods should be utilized

b. Identifies gaps in the information retrieved and determines if the search strategy should be revised

c. Repeats the search using the revised strategy as necessary

5. The information literate student extracts, records, and manages the information and its sources.

Outcomes Include:

a. Selects among various technologies the most appropriate one for the task of extracting the needed information (e.g., copy/paste software functions, photocopier, scanner, audio/visual equipment, or exploratory instruments)

b. Creates a system for organizing the information

c. Differentiates between the types of sources cited and understands the elements and correct syntax of a citation for a wide range of resources

d. Records all pertinent citation information for future reference

e. Uses various technologies to manage the information selected and organized

Standard Three

The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.

Performance Indicators:

1. The information literate student summarizes the main ideas to be extracted from the information gathered.

   Outcomes Include:

   a. Reads the text and selects main ideas

   b. Restates textual concepts in his/her own words and selects data accurately

   c. Identifies verbatim material that can be then appropriately quoted

2. The information literate student articulates and applies initial criteria for evaluating both the information and its sources.

   Outcomes Include:

   a. Examines and compares information from various sources in order to evaluate reliability, validity, accuracy, authority, timeliness, and point of view or bias

   b. Analyzes the structure and logic of supporting arguments or methods

   c. Recognizes prejudice, deception, or manipulation

   d. Recognizes the cultural, physical, or other context within which the information was created and understands the impact of context on interpreting the information

3. The information literate student synthesizes main ideas to construct new concepts.

   Outcomes Include:

   a. Recognizes interrelationships among concepts and combines them into potentially useful primary statements with supporting evidence

   b. Extends initial synthesis, when possible, at a higher level of abstraction to construct new hypotheses that may require additional information

   c. Utilizes computer and other technologies (e.g. spreadsheets, databases, multimedia, and audio or visual equipment) for studying the interaction of ideas and other phenomena

4. The information literate student compares new knowledge with prior knowledge to determine the value added, contradictions, or other unique characteristics of the information.

   Outcomes Include:

   a. Determines whether information satisfies the research or other information need

   b. Uses consciously selected criteria to determine whether the information

contradicts or verifies information used from other sources

c. Draws conclusions based upon information gathered

d. Tests theories with discipline-appropriate techniques (e.g., simulators, experiments)

e. Determines probable accuracy by questioning the source of the data, the limitations of the information gathering tools or strategies, and the reasonableness of the conclusions

f. Integrates new information with previous information or knowledge

g. Selects information that provides evidence for the topic

5. The information literate student determines whether the new knowledge has an impact on the individual's value system and takes steps to reconcile differences.

   Outcomes Include:

   a. Investigates differing viewpoints encountered in the literature

   b. Determines whether to incorporate or reject viewpoints encountered

6. The information literate student validates understanding and interpretation of the information through discourse with other individuals, subject-area experts, and/or practitioners.

   Outcomes Include:

   a. Participates in classroom and other discussions

   b. Participates in class-sponsored electronic communication forums designed to encourage discourse on the topic (e.g., email, bulletin boards, chat rooms)

   c. Seeks expert opinion through a variety of mechanisms (e.g., interviews, email, listservs)

7. The information literate student determines whether the initial query should be revised.

   Outcomes Include:

   a. Determines if original information need has been satisfied or if additional information is needed

   b. Reviews search strategy and incorporates additional concepts as necessary

   c. Reviews information retrieval sources used and expands to include others as needed

Standard Four

The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.

Performance Indicators:

1. The information literate student applies new and prior information to the planning and creation of a particular product or performance.

   Outcomes Include:

   a. Organizes the content in a manner that supports the purposes and format of the product or performance (e.g. outlines, drafts, storyboards)

   b. Articulates knowledge and skills transferred from prior experiences to planning and creating the product or performance

   c. Integrates the new and prior information, including quotations and paraphrasing, in a manner that supports the purposes of the product or performance

   d. Manipulates digital text, images, and data, as needed, transferring them from their original locations and formats to a new context

6. The information literate student revises the development process for the product or performance.

   Outcomes Include:

   a. Maintains a journal or log of activities related to the information seeking, evaluating, and communicating process

   b. Reflects on past successes, failures, and alternative strategies

7. The information literate student communicates the product or performance effectively to others.

   Outcomes Include:

   a. Chooses a communication medium and format that best supports the purposes of the product or performance and the intended audience

   b. Uses a range of information technology applications in creating the product or performance

   c. Incorporates principles of design and communication

   d. Communicates clearly and with a style that supports the purposes of the intended audience

Standard Five

The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.

Performance Indicators:

1. The information literate student understands many of the ethical, legal and socio-economic issues surrounding information and information technology.

Outcomes Include:

a. Identifies and discusses issues related to privacy and security in both the print and electronic environments
b. Identifies and discusses issues related to free vs. fee-based access to information
c. Identifies and discusses issues related to censorship and freedom of speech
d. Demonstrates an understanding of intellectual property, copyright, and fair use of copyrighted material

2. The information literate student follows laws, regulations, institutional policies, and etiquette related to the access and use of information resources.

Outcomes Include:

a. Participates in electronic discussions following accepted practices (e.g. "Netiquette")
b. Uses approved passwords and other forms of ID for access to information resources
c. Complies with institutional policies on access to information resources
d. Preserves the integrity of information resources, equipment, systems and facilities
e. Legally obtains, stores, and disseminates text, data, images, or sounds
f. Demonstrates an understanding of what constitutes plagiarism and does not represent work attributable to others as his/her own
g. Demonstrates an understanding of institutional policies related to human subjects research

3. The information literate student acknowledges the use of information sources in communicating the product or performance.

Outcomes Include:

Selects an appropriate documentation style and uses it consistently to cite sources
Posts permission granted notices, as needed, for copyrighted material

Appendix I: Selected Information Literacy Initiatives

In 1989 the American Library Association (ALA) Presidential Committee on Information Literacy issued a final report which defined four components of information literacy: the ability to recognize when information is needed and to locate, evaluate and use effectively the needed information.

http://www.ala.org/ala/mgrps/divs/acrl/publications/whitepapers/presidential.cfm

In 1990, the National Forum on Information Literacy (NFIL) was founded as a response to the recommendations of the ALA Presidential Committee *Final Report*. NFIL is a "coalition of over 75 education, business, and governmental organizations working to promote international and national awareness of the need for information literacy and encouraging activities leading to its acquisition." Forum members promote information literacy nationally, internationally, and within their own programs.

http://www.infolit.org/index.html

In March 1998 NFIL issued, *A Progress Report on Information Literacy: An Update on the American Library Association Presidential Committee on Information Literacy: Final Report*. http://www.infolit.org/documents/progress.html

In 1998 the American Association of School Libraries (AASL) and the Association of Educational Communications and Technology (AECT) published *Information Literacy Standards for Student Learning*. The AASL/AECT standards detail competencies for students in K-12.

Since 1989, in the absence of national standards, many states, school districts, state university systems, and local institutions have developed information literacy competency standards.

5. Framework for information literacy for higher education

Introduction

This *Framework for Information Literacy for Higher Education* (*Framework*) grows out of a belief that information literacy as an educational reform movement will realize its potential only through a richer, more complex set of core ideas. During the fifteen years since the publication of the *Information Literacy Competency Standards for Higher Education*,[1] academic librarians and their partners in higher education associations have developed learning outcomes, tools, and resources that some institutions have deployed to infuse information literacy concepts and skills into their curricula. However, the rapidly changing higher education environment, along with the dynamic and often uncertain information ecosystem in which all of us work and live, require new attention to be focused on foundational ideas about that ecosystem. Students have a greater role and responsibility in creating new knowledge, in understanding the contours and the changing dynamics of the world of information, and in using information, data, and scholarship ethically. Teaching faculty have a greater responsibility in designing curricula and assignments that foster enhanced engagement with the core ideas about information and scholarship within their disciplines. Librarians have a greater responsibility in identifying core ideas within their own knowledge domain that can extend learning for students, in creating a new cohesive curriculum for information literacy, and in collaborating more extensively with faculty.

The *Framework* offered here is called a framework intentionally because it is based on a cluster of interconnected core concepts, with flexible options for implementation, rather than on a set of standards or learning outcomes, or any prescriptive enumeration of skills. At the heart of this *Framework* are conceptual understandings that organize many other concepts and ideas about information, research, and scholarship into a coherent whole. These conceptual understandings are informed by the work of Wiggins and McTighe,[2] which focuses on essential concepts and questions in developing curricula, and also by *threshold concepts*[3] which are those ideas in any discipline that are passageways or portals to enlarged understanding or ways of thinking and practicing within that discipline. This *Framework* draws upon an ongoing Delphi Study that has identified several threshold concepts in information literacy,[4] but the *Framework* has been molded using fresh ideas and emphases for the threshold concepts. Two added elements illustrate important learning goals related to those concepts: *knowledge practices*,[5] which are demonstrations of ways in

which learners can increase their understanding of these information literacy concepts, and *dispositions*,[6] which describe ways in which to address the affective, attitudinal, or valuing dimension of learning. The *Framework* is organized into six frames, each consisting of a concept central to information literacy, a set of knowledge practices, and a set of dispositions. The six concepts that anchor the frames are presented alphabetically:

- Authority Is Constructed and Contextual
- Information Creation as a Process
- Information Has Value
- Research as Inquiry
- Scholarship as Conversation
- Searching as Strategic Exploration

Neither the knowledge practices nor the dispositions that support each concept are intended to prescribe what local institutions should do in using the *Framework*; each library and its partners on campus will need to deploy these frames to best fit their own situation, including designing learning outcomes. For the same reason, these lists should not be considered exhaustive.

In addition, this *Framework* draws significantly upon the concept of metaliteracy,[7] which offers a renewed vision of information literacy as an overarching set of abilities in which students are consumers and creators of information who can participate successfully in collaborative spaces.[8] Metaliteracy demands behavioral, affective, cognitive, and metacognitive engagement with the information ecosystem. This *Framework* depends on these core ideas of metaliteracy, with special focus on metacognition,[9] or critical self-reflection, as crucial to becoming more self-directed in that rapidly changing ecosystem.

Because this *Framework* envisions information literacy as extending the arc of learning throughout students' academic careers and as converging with other academic and social learning goals, an expanded definition of information literacy is offered here to emphasize dynamism, flexibility, individual growth, and community learning:

Information literacy is the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning.

The *Framework* opens the way for librarians, faculty, and other institutional partners to redesign instruction sessions, assignments, courses, and even curricula; to connect

information literacy with student success initiatives; to collaborate on pedagogical research and involve students themselves in that research; and to create wider conversations about student learning, the scholarship of teaching and learning, and the assessment of learning on local campuses and beyond.

Notes

1. Association of College & Research Libraries, *Information Literacy Competency Standards for Higher Education* (Chicago, 2000).

2. Grant Wiggins and Jay McTighe. *Understanding by Design*. (Alexandria, VA: Association for Supervision and Curriculum Development, 2004).

3. Threshold concepts are core or foundational concepts that, once grasped by the learner, create new perspectives and ways of understanding a discipline or challenging knowledge domain. Such concepts produce transformation within the learner; without them, the learner does not acquire expertise in that field of knowledge. Threshold concepts can be thought of as portals through which the learner must pass in order to develop new perspectives and wider understanding. Jan H. F. Meyer, Ray Land, and Caroline Baillie. "Editors' Preface." In *Threshold Concepts and Transformational Learning*, edited by Jan H. F. Meyer, Ray Land, and Caroline Baillie, ix–xlii. (Rotterdam, Netherlands: Sense Publishers, 2010).

4. For information on this unpublished, in-progress Delphi Study on threshold concepts and information literacy, conducted by Lori Townsend, Amy Hofer, Silvia Lu, and Korey Brunetti, see http://www.ilthresholdconcepts.com/. Lori Townsend, Korey Brunetti, and Amy R. Hofer. "Threshold Concepts and Information Literacy." *portal: Libraries and the Academy* 11, no. 3 (2011): 853–69.

5. Knowledge practices are the proficiencies or abilities that learners develop as a result of their comprehending a threshold concept.

6. Generally, a disposition is a tendency to act or think in a particular way. More specifically, a disposition is a cluster of preferences, attitudes, and intentions, as well as a set of capabilities that allow the preferences to become realized in a particular way. Gavriel Salomon. "To Be or Not to Be (Mindful)." Paper presented at the American Educational Research Association Meetings, New Orleans, LA, 1994.

7. Metaliteracy expands the scope of traditional information skills (determine, access, locate, understand, produce, and use information) to include the collaborative production and sharing of information in participatory digital environments (collaborate, produce, and share). This approach requires an ongoing adaptation to emerging technologies and an

understanding of the critical thinking and reflection required to engage in these spaces as producers, collaborators, and distributors. Thomas P. Mackey and Trudi E. Jacobson. *Metaliteracy: Reinventing Information Literacy to Empower Learners.* (Chicago: Neal-Schuman, 2014).

8. Thomas P. Mackey and Trudi E. Jacobson. "Reframing Information Literacy as a Metaliteracy." *College and Research Libraries* 72, no. 1 (2011): 62–78.

9. Metacognition is an awareness and understanding of one's own thought processes. It focuses on how people learn and process information, taking into consideration people's awareness of how they learn. (Jennifer A. Livingston. "Metacognition: An Overview." Online paper, State University of New York at Buffalo, Graduate School of Education, 1997. http://gse.buffalo.edu/fas/shuell/cep564/metacog.htm.)

Frames

These six frames are presented alphabetically and do not suggest a particular sequence in which they must be learned.

Authority Is Constructed and Contextual

Information resources reflect their creators' expertise and credibility, and are evaluated based on the information need and the context in which the information will be used. Authority is constructed in that various communities may recognize different types of authority. It is contextual in that the information need may help to determine the level of authority required.

Experts understand that authority is a type of influence recognized or exerted within a community. Experts view authority with an attitude of informed skepticism and an openness to new perspectives, additional voices, and changes in schools of thought. Experts understand the need to determine the validity of the information created by different authorities and to acknowledge biases that privilege some sources of authority over others, especially in terms of others' worldviews, gender, sexual orientation, and cultural orientations. An understanding of this concept enables novice learners to critically examine all evidence—be it a short blog post or a peer-reviewed conference proceeding—and to ask relevant questions about origins, context, and suitability for the current information need. Thus, novice learners come to respect the expertise that authority represents while remaining skeptical of the systems that have elevated that authority and the information created by it. Experts know how to seek authoritative voices but also recognize that unlikely voices can be authoritative, depending on need. Novice learners may need to rely on basic indicators of authority, such as type of publication or author

credentials, where experts recognize schools of thought or discipline-specific paradigms.

Knowledge Practices

Learners who are developing their information literate abilities

- define different types of authority, such as subject expertise (e.g., scholarship), societal position (e.g., public office or title), or special experience (e.g., participating in a historic event);
- use research tools and indicators of authority to determine the credibility of sources, understanding the elements that might temper this credibility;
- understand that many disciplines have acknowledged authorities in the sense of well-known scholars and publications that are widely considered "standard," and yet, even in those situations, some scholars would challenge the authority of those sources;
- recognize that authoritative content may be packaged formally or informally and may include sources of all media types;
- acknowledge they are developing their own authoritative voices in a particular area and recognize the responsibilities this entails, including seeking accuracy and reliability, respecting intellectual property, and participating in communities of practice;
- understand the increasingly social nature of the information ecosystem where authorities actively connect with one another and sources develop over time.

Dispositions

Learners who are developing their information literate abilities

- develop and maintain an open mind when encountering varied and sometimes conflicting perspectives;
- motivate themselves to find authoritative sources, recognizing that authority may be conferred or manifested in unexpected ways;
- develop awareness of the importance of assessing content with a skeptical stance and with a self-awareness of their own biases and worldview;
- question traditional notions of granting authority and recognize the value of diverse ideas and worldviews;
- are conscious that maintaining these attitudes and actions requires frequent self-evaluation.

Information Creation as a Process

Information in any format is produced to convey a message and is shared via a selected delivery method. The iterative processes of researching, creating, revising, and disseminating information vary, and the resulting product reflects these differences.

The information creation process could result in a range of information formats and modes of delivery, so experts look beyond format when selecting resources to use. The unique capabilities and constraints of each creation process as well as the specific information need determine how the product is used. Experts recognize that information creations are valued differently in different contexts, such as academia or the workplace. Elements that affect or reflect on the creation, such as a pre- or post-publication editing or reviewing process, may be indicators of quality. The dynamic nature of information creation and dissemination requires ongoing attention to understand evolving creation processes. Recognizing the nature of information creation, experts look to the underlying processes of creation as well as the final product to critically evaluate the usefulness of the information. Novice learners begin to recognize the significance of the creation process, leading them to increasingly sophisticated choices when matching information products with their information needs.

Knowledge Practices

Learners who are developing their information literate abilities

- articulate the capabilities and constraints of information developed through various creation processes;
- assess the fit between an information product's creation process and a particular information need;
- articulate the traditional and emerging processes of information creation and dissemination in a particular discipline;
- recognize that information may be perceived differently based on the format in which it is packaged;
- recognize the implications of information formats that contain static or dynamic information;
- monitor the value that is placed upon different types of information products in varying contexts;
- transfer knowledge of capabilities and constraints to new types of information products;

- develop, in their own creation processes, an understanding that their choices impact the purposes for which the information product will be used and the message it conveys.

Dispositions

Learners who are developing their information literate abilities

- are inclined to seek out characteristics of information products that indicate the underlying creation process;
- value the process of matching an information need with an appropriate product;
- accept that the creation of information may begin initially through communicating in a range of formats or modes;
- accept the ambiguity surrounding the potential value of information creation expressed in emerging formats or modes;
- resist the tendency to equate format with the underlying creation process;
- understand that different methods of information dissemination with different purposes are available for their use.

Information Has Value

Information possesses several dimensions of value, including as a commodity, as a means of education, as a means to influence, and as a means of negotiating and understanding the world. Legal and socioeconomic interests influence information production and dissemination.

The value of information is manifested in various contexts, including publishing practices, access to information, the commodification of personal information, and intellectual property laws. The novice learner may struggle to understand the diverse values of information in an environment where "free" information and related services are plentiful and the concept of intellectual property is first encountered through rules of citation or warnings about plagiarism and copyright law. As creators and users of information, experts understand their rights and responsibilities when participating in a community of scholarship. Experts understand that value may be wielded by powerful interests in ways that marginalize certain voices. However, value may also be leveraged by individuals and organizations to effect change and for civic, economic, social, or personal gains. Experts also understand that the individual is responsible for making deliberate and informed choices about when to comply with and when to contest current legal and socioeconomic practices concerning the value of information.

Knowledge Practices

Learners who are developing their information literate abilities

- give credit to the original ideas of others through proper attribution and citation;
- understand that intellectual property is a legal and social construct that varies by culture;
- articulate the purpose and distinguishing characteristics of copyright, fair use, open access, and the public domain;
- understand how and why some individuals or groups of individuals may be underrepresented or systematically marginalized within the systems that produce and disseminate information;
- recognize issues of access or lack of access to information sources;
- decide where and how their information is published;
- understand how the commodification of their personal information and online interactions affects the information they receive and the information they produce or disseminate online;
- make informed choices regarding their online actions in full awareness of issues related to privacy and the commodification of personal information.

Dispositions

Learners who are developing their information literate abilities

- respect the original ideas of others;
- value the skills, time, and effort needed to produce knowledge;
- see themselves as contributors to the information marketplace rather than only consumers of it;
- are inclined to examine their own information privilege.

Research as Inquiry

Research is iterative and depends upon asking increasingly complex or new questions whose answers in turn develop additional questions or lines of inquiry in any field.

Experts see inquiry as a process that focuses on problems or questions in a discipline or between disciplines that are open or unresolved. Experts recognize the collaborative effort within a discipline to extend the knowledge in that field. Many times, this process includes points of disagreement where debate and dialogue work to deepen the conversations around knowledge. This process of inquiry extends beyond the academic world to the community at large, and the process of inquiry may focus upon personal, professional, or

societal needs. The spectrum of inquiry ranges from asking simple questions that depend upon basic recapitulation of knowledge to increasingly sophisticated abilities to refine research questions, use more advanced research methods, and explore more diverse disciplinary perspectives. Novice learners acquire strategic perspectives on inquiry and a greater repertoire of investigative methods.

Knowledge Practices

Learners who are developing their information literate abilities

- formulate questions for research based on information gaps or on re-examination of existing, possibly conflicting, information;
- determine an appropriate scope of investigation;
- deal with complex research by breaking complex questions into simple ones, limiting the scope of investigations;
- use various research methods, based on need, circumstance, and type of inquiry;
- monitor gathered information and assess for gaps or weaknesses;
- organize information in meaningful ways;
- synthesize ideas gathered from multiple sources;
- draw reasonable conclusions based on the analysis and interpretation of information.

Dispositions

Learners who are developing their information literate abilities

- consider research as open-ended exploration and engagement with information;
- appreciate that a question may appear to be simple but still disruptive and important to research;
- value intellectual curiosity in developing questions and learning new investigative methods;
- maintain an open mind and a critical stance;
- value persistence, adaptability, and flexibility and recognize that ambiguity can benefit the research process;
- seek multiple perspectives during information gathering and assessment;
- seek appropriate help when needed;
- follow ethical and legal guidelines in gathering and using information;
- demonstrate intellectual humility (i.e., recognize their own intellectual or experiential limitations).

Scholarship as Conversation

Communities of scholars, researchers, or professionals engage in sustained discourse with new insights and discoveries occurring over time as a result of varied perspectives and interpretations.

Research in scholarly and professional fields is a discursive practice in which ideas are formulated, debated, and weighed against one another over extended periods of time. Instead of seeking discrete answers to complex problems, experts understand that a given issue may be characterized by several competing perspectives as part of an ongoing conversation in which information users and creators come together and negotiate meaning. Experts understand that, while some topics have established answers through this process, a query may not have a single uncontested answer. Experts are therefore inclined to seek out many perspectives, not merely the ones with which they are familiar. These perspectives might be in their own discipline or profession or may be in other fields. While novice learners and experts at all levels can take part in the conversation, established power and authority structures may influence their ability to participate and can privilege certain voices and information. Developing familiarity with the sources of evidence, methods, and modes of discourse in the field assists novice learners to enter the conversation. New forms of scholarly and research conversations provide more avenues in which a wide variety of individuals may have a voice in the conversation. Providing attribution to relevant previous research is also an obligation of participation in the conversation. It enables the conversation to move forward and strengthens one's voice in the conversation.

Knowledge Practices

Learners who are developing their information literate abilities

- cite the contributing work of others in their own information production;
- contribute to scholarly conversation at an appropriate level, such as local online community, guided discussion, undergraduate research journal, conference presentation/poster session;
- identify barriers to entering scholarly conversation via various venues;
- critically evaluate contributions made by others in participatory information environments;
- identify the contribution that particular articles, books, and other scholarly pieces make to disciplinary knowledge;
- summarize the changes in scholarly perspective over time on a particular topic within a specific discipline;

- recognize that a given scholarly work may not represent the only or even the majority perspective on the issue.

Dispositions

Learners who are developing their information literate abilities

- recognize they are often entering into an ongoing scholarly conversation and not a finished conversation;
- seek out conversations taking place in their research area;
- see themselves as contributors to scholarship rather than only consumers of it;
- recognize that scholarly conversations take place in various venues;
- suspend judgment on the value of a particular piece of scholarship until the larger context for the scholarly conversation is better understood;
- understand the responsibility that comes with entering the conversation through participatory channels;
- value user-generated content and evaluate contributions made by others;
- recognize that systems privilege authorities and that not having a fluency in the language and process of a discipline disempowers their ability to participate and engage.

Searching as Strategic Exploration

Searching for information is often nonlinear and iterative, requiring the evaluation of a range of information sources and the mental flexibility to pursue alternate avenues as new understanding develops.

The act of searching often begins with a question that directs the act of finding needed information. Encompassing inquiry, discovery, and serendipity, searching identifies both possible relevant sources as well as the means to access those sources. Experts realize that information searching is a contextualized, complex experience that affects, and is affected by, the cognitive, affective, and social dimensions of the searcher. Novice learners may search a limited set of resources, while experts may search more broadly and deeply to determine the most appropriate information within the project scope. Likewise, novice learners tend to use few search strategies, while experts select from various search strategies, depending on the sources, scope, and context of the information need.

Knowledge Practices

Learners who are developing their information literate abilities

- determine the initial scope of the task required to meet their information needs;
- identify interested parties, such as scholars, organizations, governments, and

industries, who might produce information about a topic and then determine how to access that information;

- utilize divergent (e.g., brainstorming) and convergent (e.g., selecting the best source) thinking when searching;
- match information needs and search strategies to appropriate search tools;
- design and refine needs and search strategies as necessary, based on search results;
- understand how information systems (i.e., collections of recorded information) are organized in order to access relevant information;
- use different types of searching language (e.g., controlled vocabulary, keywords, natural language) appropriately;
- manage searching processes and results effectively.

Dispositions

Learners who are developing their information literate abilities

- exhibit mental flexibility and creativity
- understand that first attempts at searching do not always produce adequate results
- realize that information sources vary greatly in content and format and have varying relevance and value, depending on the needs and nature of the search
- seek guidance from experts, such as librarians, researchers, and professionals
- recognize the value of browsing and other serendipitous methods of information gathering

persist in the face of search challenges, and know when they have enough information to complete the information task

6. Australian & New Zealand Institute for information literacy framework

Statement of principles

The Australian and New Zealand information literacy framework is based on four overarching principles. These are, that information literate people

- engage in independent learning through constructing new meaning, understanding and knowledge
- derive satisfaction and personal fulfillment from using information wisely
- individually and collectively search for and use information for decision making and problem solving in order to address personal, professional and societal issues
- demonstrate social responsibility through a commitment to lifelong learning and community participation

Core standards

The principles frame six core standards which underpin information literacy acquisition, understanding and application by an individual. These standards identify that the information literate person

- recognises the need for information and determines the nature and extent of the information needed
- finds needed information effectively and efficiently
- critically evaluates information and the information seeking process
- manages information collected or generated
- applies prior and new information to construct new concepts or create new understandings
- uses information with understanding and acknowledges cultural, ethical, economic, legal, and social issues surrounding the use of information

Standard One

The information literate person recognises the need for information and determines the nature and extent of the information needed

Learning outcomes

The information literate person

1.1. defines and articulates the information need

1.2. understands the purpose, scope and appropriateness of a variety of information sources

1.3. re-evaluates the nature and extent of the information need

1.4. uses diverse sources of information to inform decisions

Examples for Standard One

1.1. defines and articulates the information need

b explores general information sources to increase familiarity with the topic

c identifies key concepts and terms in order to formulate and focus questions

d defines or modifies the information need to achieve a manageable focus

e may confer with others to identify a research topic or other information need

1.2. understands the purpose, scope and appropriateness of a variety of information sources

- understands how information is organised and disseminated, recognising the context of the topic in the discipline
- differentiates between, and values, the variety of potential sources of information
- identifies the intended purpose and audience of potential resources eg popular vs scholarly, current vs historical
- differentiates between primary and secondary sources, recognising how their use and importance vary with each discipline

1.3. re-evaluates the nature and extent of the information need

- reviews the initial information need to clarify, revise, or refine the question
- articulates and uses criteria to make information decisions and choices

1.4. uses diverse sources of information to inform decisions

- understands that different sources will present different perspectives
- uses a range of sources to understand the issues
- uses information for decision making and problem solving

Standard Two

The information literate person finds needed information effectively and efficiently

Learning outcomes

The information literate person

2.1. selects the most appropriate methods or tools for finding information

2.2. constructs and implements effective search strategies

2.3. obtains information using appropriate methods

2.4. keeps up to date with information sources, information technologies, information access tools and investigative methods

Examples for Standard Two

2.1. selects the most appropriate methods or tools for finding information

- identifies appropriate investigative methods eg laboratory experiment, simulation, fieldwork
- investigates benefits and applicability of various investigative methods
- investigates the scope, content, and organisation of information access tools
- consults with librarians and other information professionals to help identify information access tools

2.2. constructs and implements effective search strategies

- develops a search plan appropriate to the investigative method
- identifies keywords, synonyms and related terms for the information needed
- selects appropriate controlled vocabulary or a classification specific to the discipline or information access tools
- constructs and implements a search strategy using appropriate commands
- implements the search using investigative methodology appropriate to the discipline

2.3. obtains information using appropriate methods

- uses various information access tools to retrieve information in a variety of formats
- uses appropriate services to retrieve information needed eg document delivery, professional associations, institutional research offices, community resources, experts and practitioners
- uses surveys, letters, interviews, and other forms of inquiry to retrieve primary information

2.4. keeps up to date with information sources, information technologies, information access tools and investigative methods
    - maintains awareness of changes in information and communications technology
    - uses alert/current awareness services
    - subscribes to listservs and discussion groups
    - habitually browses print and electronic sources

Standard Three

The information literate person critically evaluates information and the information seeking process

Learning outcomes

The information literate person

3.1. assesses the usefulness and relevance of the information obtained

3.2. defines and applies criteria for evaluating information

3.3. reflects on the information seeking process and revises search strategies as necessary

Examples for Standard Three

3.1. assesses the usefulness and relevance of the information obtained
    - assesses the quantity, quality, and relevance of the search results to determine whether alternative information access tools or investigative methods should be utilised
    - identifies gaps in the information retrieved and determines if the search strategy should be revised
    - repeats the search using the revised strategy as necessary

3.2. defines and applies criteria for evaluating information
    - examines and compares information from various sources to evaluate reliability, validity, accuracy, authority, timeliness, and point of view or bias
    - analyses the structure and logic of supporting arguments or methods
    - recognises and questions prejudice, deception, or manipulation
    - recognises the cultural, physical, or other context within which the

information was created and understands the impact of context on interpreting
the information

- recognises and understands own biases and cultural context

3.3.reflects on the information seeking process and revises search strategies as necessary

- determines if original information need has been satisfied or if additional information is needed
- reviews the search strategy
- reviews information access tools used and expands to include others as needed
- recognises that the information search process is evolutionary and nonlinear

Standard Four

The information literate person manages information collected or generated

Learning outcomes

The information literate person

4.1.records information and its sources

4.2.organises (orders/classifies/stores) information

Examples for Standard Four

4.1.records information and its sources

- organises the content in a manner that supports the purposes and format of the product eg outlines, drafts, storyboards
- differentiates between the types of sources cited and understands the elements and correct citation style for a wide range of resources
- records all pertinent citation information for future reference and retrieval

4.2.organises (orders/classifies/stores) information

- compiles references in the required bibliographic format
- creates a system for organising and managing the information obtained eg EndNote, card files

Standard Five

The information literate person applies prior and new information to construct new concepts or create new understandings

Learning outcomes

The information literate person

5.1. compares and integrates new understandings with prior knowledge to determine the value added, contradictions, or other unique characteristics of the information

5.2. communicates knowledge and new understandings effectively

Examples for Standard Five

a. compares and integrates new understandings with prior knowledge to determine the value added, contradictions, or other unique characteristics of the information

- determines whether information satisfies the research or other information need and whether the information contradicts or verifies information used from other sources
- recognises interrelationships between concepts and draws conclusions based upon information gathered
- selects information that provides evidence for the topic and summarises the main ideas extracted from the information gathered
- understands that information and knowledge in any discipline is in part a social construction and is subject to change as a result of ongoing dialogue and research
- extends initial synthesis at a higher level of abstraction to construct new hypotheses

b. communicates knowledge and new understandings effectively

- chooses a communication medium and format that best supports the purposes of the product and the intended audience
- uses a range of appropriate information technology applications in creating the product
- incorporates principles of design and communication appropriate to the environment

- communicates clearly and in a style to support the purposes of the intended audience

Standard Six

The information literate person uses information with understanding and acknowledges cultural, ethical, economic, legal, and social issues surrounding the use of information

Learning outcomes

The information literate person

6.1. acknowledges cultural, ethical, and socioeconomic issues related to access to, and use of, information

6.2. recognises that information is underpinned by values and beliefs

6.3. conforms with conventions and etiquette related to access to, and use of, information

6.4. legally obtains, stores, and disseminates text, data, images, or sounds

Examples for Standard Six

6.1. acknowledges cultural, ethical, and socioeconomic issues related to access to, and use of, information

- identifies and can articulate issues related to privacy and security in the print and electronic environments
- identifies and understands issues related to censorship and freedom of speech
- understands and respects Indigenous and multicultural perspectives of using information

6.2. recognises that information is underpinned by values and beliefs

- identifies whether there are differing values that underpin new information or whether information has implications for personal values and beliefs
- applies reasoning to determine whether to incorporate or reject viewpoints encountered
- maintains an internally coherent set of values informed by knowledge and experience

6.3. conforms with conventions and etiquette related to access to, and use of, information

- demonstrates an understanding of what constitutes plagiarism and correctly acknowledges the work and ideas of others
- participates in electronic discussions following accepted practices eg Netiquette

6.4.legally obtains, stores, and disseminates text, data, images, or sounds

- understands fair dealing in respect of the acquisition and dissemination of educational and research materials
- respects the access rights of all users and does not damage information resources
- obtains, stores, and disseminates text, data, images, or sounds in a legal manner
- demonstrates an understanding of intellectual property, copyright and fair use of copyrighted material

7. The Sconul seven pillars of information literacy

Information Literacy is an umbrella term which encompasses concepts such as digital, visual and media literacies, academic literacy, information handling, information skills, data curation and data management.

Definition

Information literate people will demonstrate an awareness of how they gather, use, manage, synthesise and create information and data in an ethical manner and will have the information skills to do so effectively.

In the 21century, information literacy is a key attribute for everyone, irrespective of age or experience. Information Literacy is evidenced through understanding the ways in which information and data is created and handled, learning skills in its management and use and modifying learning attitudes, habits and behaviours to appreciate the role of information literacy in learning. In this context learning is understood as the constant search for meaning by the acquisition of information, reflection, engagement and active application in multiple contexts (NASPA, 2004)

Developing as an information literate person is a continuing, holistic process with often simultaneous activities or processes which can be encompassed within the Seven Pillars of Information Literacy. Within each "pillar" an individual can develop from "novice" to "expert" as they progress through their learning life, although, as the information world itself is constantly changing and developing, it is possible to move down a pillar as well as progress up it. The expectations of levels reached on each pillar may be different in different contexts and for different ages and levels of learner and is also dependent on experience and information need. Any information literacy development must therefore also be considered in the context of the broad information landscape in which an individual operates and their personal information literacy landscape (Bent, 2008).

This model defines the core skills and competencies (ability) and attitudes and behaviours (understanding) at the heart of information literacy development in higher education.

Lenses

A series of "lenses" is being developed for different user populations to enable the model to be applied in specific situations. The lenses may extend or simplify the core higher education model, depending on the learner group to which they relate. Contributions to the lens development from professionals working with different user groups are welcomed.

How to use this model

The model is conceived as a three dimensional circular "building", founded on an information landscape which comprises the information world as it is perceived by an individual at that point in time. The picture is also coloured by an individual's personal information literacy landscape, in other words, their aptitude, background and experiences, which will affect how they respond to any information literacy development.

The circular nature of the model demonstrates that becoming information literate is not a linear process; a person can be developing within several pillars simultaneously and independently, although in practice they are often closely linked.

Each pillar is further described by a series of statements relating to a set of skills/competencies and a set of attitudes/understandings. It is expected that as a person becomes more information literate they will demonstrate more of the attributes in each pillar and so move towards the top of the pillar. The names of the pillars can be used to map across to other frameworks (for example, the Researcher Development Framework (Vitae, 2010)) or to describe part of the learning process.

The core model describes a set of generic skills and understandings; for different user communities a "lens" can be developed which highlights different attributes, adds in more complex or simpler statements and uses language recognised by the specific community which it represents. In this way, it is hoped the model can be used flexibly by individuals and teachers who can adapt it as appropriate to personal circumstances.

IDENTIFY

Able to identify a personal need for information

Understands:

- That new information and data is constantly being produced and that there is always more to learn
- That being information literate involves developing a learning habit so new information is being actively sought all the time
- That ideas and opportunities are created by investigating/seeking information
- The scale of the world of published and unpublished information and data

Is able to:

- Identify a lack of knowledge in a subject area
- Identify a search topic / question and define it using simple terminology

- Articulate current knowledge on a topic
- Recognise a need for information and data to achieve a specific end and define limits to the information need
- Use background information to underpin the search
- Take personal responsibility for an information search
- Manage time effectively to complete a search

SCOPE

Can assess current knowledge and identify gaps

Understands:

- What types of information are available
- The characteristics of the different types of information source available to them and how they may be affected by the format (digital, print)
- The publication process in terms of why individuals publish and the currency of information
- Issues of accessibility
- What services are available to help and how to access them

Is able to:

- "Know what you don't know" to identify any information gaps Identify which types of information will best meet the need
- Identify the available search tools, such as general and subject specific resources at different levels
- Identify different formats in which information may be provided Demonstrate the ability to use new tools as they become available

PLAN

Can construct strategies for locating information and data

Understands:

- The range of searching techniques available for finding information. The differences between search tools, recognising advantages and limitations
- Why complex search strategies can make a difference to the breadth and depth of information found

- The need to develop approaches to searching such that new tools are sought for each new question (not relying always on most familiar resources)
- The need to revise keywords and adapt search strategies according to the resources available and / or results found
- The value of controlled vocabularies and taxonomies in searching

Is able to:

- Scope their search question clearly and in appropriate language
- Define a search strategy by using appropriate keywords and concepts, defining and setting limits
- Select the most appropriate search tools
- Identify controlled vocabularies and taxonomies to aid in searching if appropriate
- Identify appropriate search techniques to use as necessary
- Identify specialist search tools appropriate to each individual information need

GATHER

Can locate and access the information and data they need

Understands:

- How information and data is organised, digitally and in print sources
- How libraries provide access to resources
- How digital technologies are providing collaborative tools to create and share information
- The issues involved in collecting new data
- The different elements of a citation and how this describes an information resource
- The use of abstracts
- The need to keep up to date with new information
- The difference between free and paid for resources
- The risks involved in operating in a virtual world
- The importance of appraising and evaluating search results

Is able to:

- Use a range of retrieval tools and resources effectively Construct complex searches appropriate to different digital and print resources

- Access full text information, both print and digital, read and download online material and data
- Use appropriate techniques to collect new data
- Keep up to date with new information
- Engage with their community to share information
- Identify when the information need has not been met
- Use online and printed help and can find personal, expert help

EVALUATE

Can review the research process and compare and evaluate information and data

Understands:

- The information and data landscape of their learning/research context
- Issues of quality, accuracy, relevance, bias, reputation and credibility relating to information and data sources
- How information is evaluated and published, to help inform personal evaluation process
- The importance of consistency in data collection
- The importance of citation in their learning/research context

Is able to:

- Distinguish between different information resources and the information they provide
- Choose suitable material on their search topic, using appropriate criteria
- Assess the quality, accuracy, relevance, bias, reputation and credibility of the information resources found
- Assess the credibility of the data gathered
- Read critically, identifying key points and arguments
- Relate the information found to the original search strategy
- Critically appraise and evaluate their own findings and those of others Know when to stop

MANAGE

Can organise information professionally and ethically

Understands:

- Their responsibility to be honest in all aspects of information handling and dissemination (e.g. copyright, plagiarism and intellectual property issues)
- The need to adopt appropriate data handling methods
- The role they play in helping others in information seeking and management
- The need to keep systematic records
- The importance of storing and sharing information and data ethically
- The role of professionals, such as data managers and librarians, who can advise, assist and support with all aspects of information management

Is able to:

- Use bibliographical software if appropriate to manage information
- Cite printed and electronic sources using suitable referencing styles
- Create appropriately formatted bibliographies
- Demonstrate awareness of issues relating to the rights of others including ethics, data protection, copyright, plagiarism and any other intellectual property issues
- Meet standards of conduct for academic integrity
- Use appropriate data management software and techniques to manage data

PRESENT

Can apply the knowledge gained: presenting the results of their research, synthesising new and old information and data to create new knowledge and disseminating it in a variety of ways

Understands:

- The difference between summarising and synthesising
  That different forms of writing/ presentation style can be used to present
- information to different communities
- That data can be presented in different ways
- Their personal responsibility to store and share information and data
- Their personal responsibility to disseminate information & knowledge
- How their work will be evaluated
- The processes of publication
- The concept of attribution
- That individuals can take an active part in the creation of information through traditional publishing and digital technologies (e.g. blogs, wikis)

Is able to:

- Use the information and data found to address the original question Summarise documents and reports verbally and in writing Incorporate new information into the context of existing knowledge Analyse and present data appropriately
- Synthesise and appraise new and complex information from different sources
- Communicate effectively using appropriate writing styles in a variety of formats
- Communicate effectively verbally
- Select appropriate publications and dissemination outlets in which to publish if appropriate
- Develop a personal profile in the community using appropriate personal networks and digital technologies (e.g. discussion lists, social networking sites, blogs, etc.)

8. Seven faces of information literacy in higher education

Category one: the information technology conception

Information literacy is seen as using information technology for information retrieval and communication.

At the heart of this experience lies the importance of information technology for information access and personal networking. Information technology is the focus of attention and information is viewed objectively, as something outside the individual. One of the major roles of technology is to make that information accessible, or to bring it into awareness. Technology also plays a vital role in allowing the information user to stay informed and to manipulate information that has been located. In this sense the relation between people and information may be described in terms of depending upon technology to enhance access to information.

To summarise, category one identifies a way of experiencing information literacy that is dependent upon the availability and use ability of information technology. Information literate people, when viewed this way are those who scan the information environment to attain a high level of information awareness. It is possible to experience information literacy, according to this view if one is a member of a community which supports the use of technology. Where the ability to use information technology rests with individuals, information literacy becomes an unachievable goal. In the next category, the attention of the information user shifts from information technology to information sources.

Category two: the information sources conception

Information literacy is seen as finding information located in information sources.

Here information literacy is experienced in terms of knowledge of sources of information and an ability to access these independently or via an intermediary. It is knowledge of information sources which makes it possible to retrieve the information which is contained within them. The sources may be in a variety of media, including electronic. The sources may also be people. Different orientations to the problem of information retrieval give rise to three subcategories:

- knowing information sources and their structure
- knowing information sources and using them independently

- knowing information sources and using them flexibly, either independently or via an intermediary

Category three: the information process conception

Information literacy is seen as executing a process.

In this category information processes are the focus of attention. Information processes are those strategies implemented by information users confronting a novel situation in which they experience a lack of knowledge (or information). As the way in which the information is to be used is very much a consideration in this experience, information use forms the next level of awareness. Information technology is not an important feature of this experience. It is therefore located in the outer field of awareness.

Essentially, information literacy is seen as the ability to confront novel situations, and to deal with those situations on the basis of being equipped with a process for finding and using the necessary information. The precise nature of the process, however, varies from person to person. Effective action, problem-solving or decision-making is the outcome of the experience.

Category four: the information control conception

Information literacy is seen as controlling information.

In this experience information control is the focus of attention. There are three subcategories reflecting different forms of control:

- control of information is established using filing cabinets.
- control of information is established using the brain or memory via various forms of links and associations.
- control of information is established using computers to allow storage and retrieval.

Information organisation, in this context, is about storing information, usually documents, in a fashion which ensures easy retrieval. All the information is selected on the basis of its likely value for future use in research or teaching, for example. The primary concern of this conception is bringing resources under the controlling influence of the user. Information use, therefore, forms the second level of awareness.

Information literate people are seen as those who can use various media to bring information within their sphere of influence, so that they can retrieve and manipulate it when necessary.

Category five: the knowledge construction conception

Information literacy is seen as building up a personal knowledge base in a new area of interest.

In this and subsequent kinds of experience, information use becomes the focus of attention. Critical information use, for the purpose of constructing a personal knowledge base, is the distinguishing feature of this conception. Information, in this experience, becomes an object of reflection and appears to individual users in unique ways; it takes on a 'fluid' or 'subjective' character. The information user is involved in evaluation and analysis, whilst the information presents itself uniquely to the user.

The idea of a knowledge base in this category goes beyond that of a store of information; it involves the adoption of personal perspectives. This is achieved through critical analysis of what is read. Most importantly, the knowledge base of the discipline is not changed or added to in any way.

Category six: the knowledge extension conception

Information literacy is seen as working with knowledge and personal perspectives adopted in such a way that novel insights are gained.

Information use, involving a capacity for intuition, or creative insight, is the distinguishing feature of this experience. Such intuition or insight usually results in the development of novel ideas or creative solutions. The knowledge base is recognised by participants as being an essential part of this way of conceiving of, or experiencing, information literacy.

Information use remains the focus of attention here; it is, however, no longer aimed at knowledge construction, but rather at knowledge extension. A capacity for intuition is seen as necessary for allowing information to be used in this way. The knowledge base differs from that in the previous category in that it includes knowledge gained through personal experience.

Creativity, or intuition, is about *how* novel insights are gained. Although people describe this as a mysterious process which they cannot explain, some describe it as an activity of the mind. The way in which it is explained by participants probably depends upon their own world views. What is more important is that 'new knowledge or information' is recognised as the outcome, and intuition is recognised as the contributing factor to effective information use.

Category seven: the wisdom conception

Information literacy is seen as using information wisely for the benefit of others.

Wise use of information, involving the adoption of personal values in relation to information use, is the distinguishing feature of this conception. Wise use of information occurs in a range of contexts including exercising judgement, making decisions, and doing research. Wisdom is a personal quality brought to the use of information. Using information wisely presupposes a consciousness of personal values, attitudes and beliefs. It involves placing the information in a larger context, and seeing it in the light of broader experience, for example, historically, temporarily, socio-culturally. When information is seen within a larger context and one's own life experience it can then used in qualitatively different ways. A consciousness of personal values and ethics is needed to enable information to be used in this way. For some respondents information technology was a negative influence on this kind of experience.

9. Six frames for information literacy education

Altogether, six frames are presented:

(1) The Content Frame

(2) The Competency Frame

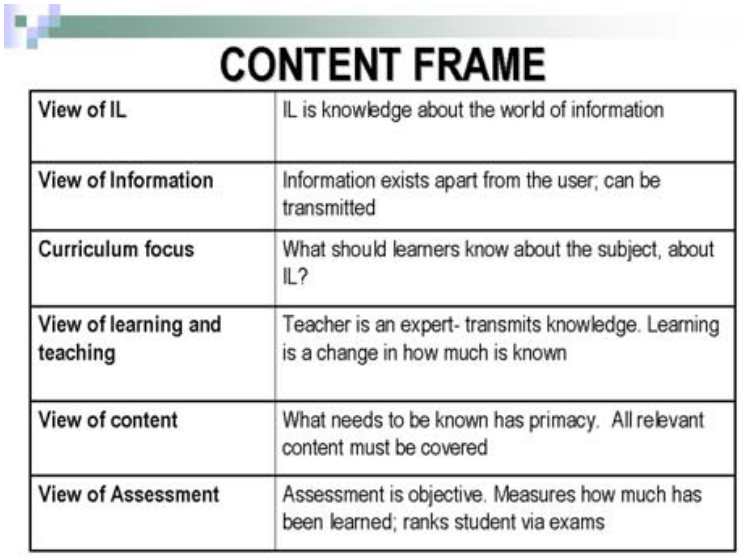
(3) The Learning to Learn Frame

(4) The Personal Relevance Frame

(5) The Social Impact Frame and

(6) The Relational Frame.

Users of the Content Frame (Figure 3) usually adopt a discipline orientation. Their focus is on what learners should know about IL. Assessment of IL typically quantifies how much has been learned. A typical example in relation to IL education might be teaching IL sessions within a discipline based subject and providing lectures on a key set of information tools and techniques. This might be followed by a test of recall.



CONTENT FRAME

View of IL	IL is knowledge about the world of information
View of Information	Information exists apart from the user; can be transmitted
Curriculum focus	What should learners know about the subject, about IL?
View of learning and teaching	Teacher is an expert- transmits knowledge. Learning is a change in how much is known
View of content	What needs to be known has primacy. All relevant content must be covered
View of Assessment	Assessment is objective. Measures how much has been learned; ranks student via exams

Users of the Competency Frame (Figure 4) usually adopt a behavioural or performance orientation. They ask what learners should be able to do, and at what level of competence? A

program of instruction is usually followed to acquire the required competencies. Assessment of IL typically seeks to specify what level of skill has been achieved. A typical example in IL education might be the design of sequenced instruction to teach the use of an electronic tool; supplemented by testing to determine the level of skill that has been attained by the learner at specified points in the learning process.

COMPETENCY FRAME

View of IL	IL is a set of competencies or skills
View of Information	Information contributes to the performance of the relevant capability
Curriculum focus	What should learners be able to do?
View of learning and teaching	Teachers analyse tasks into knowledge and skills; learners become competent by following predetermined pathways.
View of content	Content is derived from observation of skilful practitioners
View of assessment	Assessment determines what level of skill has been achieved

Users of the learning-to-learn frame (Figure 5) usually adopt a constructivist orientation. They ask what it means to think like an information literate professional, for example an architect, engineer, journalist or landscape designer. They are also interested in what will help learners construct knowledge appropriately, and develop learning processes that foster the development of professional thinking patterns. Assessment of IL seeks to determine how information processes have informed learning or learners approach to the problem at hand. A typical example might be setting a real life problem in which the need to access, evaluate and use information from a range of sources is central and appropriately supported.

LEARNING TO LEARN FRAME

View of IL	IL is a way of learning
View of Information	Information is subjective – internalised and constructed by learners
Curriculum focus	What does it mean to think like an (IL) professional in the relevant field?
View of teaching and learning	Teachers facilitate collaborative learning; learners develop conceptual structure and ways of thinking and reasoning
View of content	Content is chosen for mastering important concepts and fostering reflective practice
View of assessment	Complex, contextual problems are proposed. Self or peer assessment is encouraged

Users of the Personal Relevance frame (Figure 6) usually adopt an experiential orientation. In relation to IL education they need learners to develop a sense of what IL can do for them. They are interested in the kinds of experiences that are required to enable learners to

engage with the subject matter. Assessment is typically portfolio based and learners self-assess. A typical example might be participating in a community project that required engagement with relevant information services and providers; then subsequently reflecting on the experience and what was learned about both the subject and information use in that context.

PERSONAL RELEVANCE FRAME

View of IL	IL is learned in context and is different for different people/groups
View of Information	Valuable information is useful to the learners
Curriculum focus	What good is IL to me?
View of teaching and learning	Teaching focuses on helping learners find motivation. Learning is about finding personal relevance and meaning
View of content	Problems, cases, scenarios selected to reveal relevance and meaning
View of assessment	Typically portfolio based – learners self assess

Users of this Social Impact frame (Figure 7) usually adopt a social reform orientation. Their interest is in how IL impacts society, in how it may help communities inform significant problems. A typical example might involve focussing learners' attention on various issues and values associated with problems surrounding the Digital Divide, and proposing tasks related to policy, technology or training designed to assist in bridging that divide. Learners would be assessed in terms of their understanding of how IL could influence the social problem.

SOCIAL IMPACT FRAME

View of IL	IL issues are important to society
View of Information	Information is viewed within social contexts
Curriculum focus	How does IL impact society?
View of teaching and learning	Teachers role is to challenge the status quo. Learning is about adopting perspectives that will encourage social change.
View of content	Reveals how IL can inform widespread or important social issues or problems
View of assessment	Designed to encourage experience of the impact of IL

Users of the Relational frame (Figure 8) are oriented towards the ways in which learners are aware of IL or specific relevant phenomena associated with IL. They are interested in designing experiences that help learners discern more powerful ways of seeing the phenomena in question. Assessment is designed to identify which ways of seeing IL, or other relevant phenomenon, students have learned to discern. Reflection is one strategy to encourage students to discern more complex forms of the phenomenon. A typical example might involve helping students learn to search the internet by designing experiences that focus their attention on previously undiscerned aspects of the experience (See Case A examined later on in this paper).

RELATIONAL FRAME

View of IL	IL is a complex of different ways of interacting with information
View of Information	Information may be experienced as objective, subjective or transformational
Curriculum focus	Bringing about awareness of the critical ways of seeing or experiencing
View of teaching and learning	Teachers bring about particular ways of seeing specific phenomena; learning is coming to see the world differently
View of content	Examples selected to help students discover new ways of seeing. Critical phenomena for learning must be identified.
Assessment	Designed to reveal ways of experiencing

10. A new curriculum for information literacy

Curriculum aim

The curriculum outlines what we believe to be a continuum of skills, competencies, behaviours and attitudes ranging from functional skills to intellectual operations that together comprise the spectrum of information literacy.

The overarching aim of the curriculum is to help undergraduate learners to develop a high-level, reflective understanding of information contexts and issues which will empower them with a robust framework for handling new information situations, and to generate strategies for evaluating, analysing and and assimilating that information as needed and at the time it is required.

The emphasis throughout is on the student's development as a discerning scholar and, beyond the academic arena, as an informed citizen and an autonomous and lifelong learner.

Curriculum attributes

The curriculum is intended to be sufficiently flexible and adaptable that it can be implemented in any higher education institution at undergraduate level. In line with both CILIP's and UNESCO's visions, the curriculum is grounded in a view of information literacy as fundamental to the ongoing development of the individual in both an academic and a social context. Its design was informed by the following principles:

• Holistic: supporting the whole process of study and research rather than just teaching traditional library skills

• Modular: consisting of ongoing classes to meet the developing needs of students during their whole undergraduate career, not just one-shot sessions.

• Embedded: forming a salient part of academic teaching, or run closely alongside it over the course of the academic year, and with activities and problems directly related to students' subject context

• Active and assessed: containing a significant element of active and reflective learning, including peer assessment elements

• Flexible: for use and adaptation in all UK Higher Education Institutes, and designed specifically for flexible implementation

• Transformative: grounded in a broad reading of 'information literacy' which sees IL not as a set of competencies but as a fundamental attribute of the discerning scholar, and as a crucial social and personal element in the digital age

Using the curriculum

The curriculum consists of ten thematic strands encompassing the full range of facets comprised in information literacy. (Note that the strands are not intended to form the basis of individual teaching sessions, but to identify the complex interplay of elements encompassed within information literacy.)

Strands 1 and 10, which bookend the curriculum, link reflective learning with specific transition points in the undergraduate career. Strand 1 focuses on the transition from school to higher education - a perfect time to engage students in their own learning process by giving them a vocabulary and analytic structure through which to address the significant changes in expectations, teaching styles, and attitudes towards learning that occur at this point.

Strand 10 deals with transferring information literacy skills, behaviours and attitudes to everyday life, in line with the principles of lifelong learning.

Strand 2, in contrast, is not linked to a specific transition point. Rather, it is informed by the idea that change occurs throughout the learning process as a natural, unavoidable and sometimes challenging aspect of learning. The content of Strand 2 is iterative and reflective, and aims to give students ongoing, scaffolded support as they develop the conceptual and intellectual infrastructure for assimilating new information over the course of their undergraduate career. The focus in these three strands (1, 2 and 10) is on learning to learn.

Strand 3 aims to explore and develop the academic literacies of reading and writing at both the functional, procedural level - skimming and scanning strategies, recognising and using appropriate academic idiom - and in higher-order activities such as textual interrogation and critiquing, argument construction, and understanding of a discipline's epistemological structure and values.

Strands 4 and 5 focus on dealing with subject-specific information. Strand 5 is intended to familiarise students with specialist resources of various types and content in their discipline, while Strand 4 focuses on developing awareness and understanding of the *range* of sources types available and how to evaluate them for reliability, authority and their appropriateness for the student's specific purpose. The underlying purpose of these strands is to enable students to become familiar with the information landscape of their discipline.

Strand 6 focuses on practical, functional skills, many of which will be recognisable in existing library instruction courses. These remain key skills without which students will

struggle to find, select, manage and process academic information efficiently. In many cases a huge range of software and online tools is available to simplify these processes. We have not stipulated particular tools to teach, firstly since technology is moving at too fast a pace, and secondly in order to emphasise that understanding the process itself is as important as being aware of tools or programs designed to aid the process.

Strands 7, 8 and 9 deal with the high-order cognitive and intellectual functions of information handling. These include critiquing and analysing material, synthesising viewpoints, formulating research questions, and the ethical dimension of information use and production. These facets have traditionally been perceived as belonging to the academic province; however, as discussed in the Theoretical Background and the Expert Report which accompany this document, a holistic view of information literacy advocates that separating 'functional' skills and high-order abilities occludes the research process and disadvantages the student.

The strands thus fall into five broad learning categories, containing multiple levels of development:

key skills

- academic literacies
- subject-specific competences
- advanced information handling
- learning to learn

Teaching sessions can be constructed by selecting an element from each category to match the overall learning outcomes of the session. In this way each session will contain:

- a practical 'take-home' skill
- a subject-specific context in which to situate and deploy the skill, including an increased awareness of academic reading and writing conventions within the discipline
- an element of advanced information handling allowing the student to develop sophisticated and nuanced techniques for evaluating, assimilating and synthesising information
- a reflective component allowing the learner to assess how the new skill, insight and behaviour will affect or enrich their existing practices and attitudes

The strands have been colour-coded according to category to facilitate this structure.

In addition to the curriculum itself, we have produced a set of supporting resources to help implement the curriculum including:

- Appendix 1: Mapping to existing IL frameworks and standards
- Appendix 2: Evidence toolkit for implementing the curriculum
- Appendix 3: Six tips for transforming your teaching
- Appendix 4: Good practice in information literacy

Other related resources you may wish to consult which were produced during the Arcadia project include:

- Theoretical background
- Expert consultation report

Appendix 2. Letter of ethical approval from the researcher's employer

VIETNAM NATIONAL UNIVERSITY – HO CHI MINH CITY
UNIVERSITY OF SOCIAL SCIENCES AND HUMANITIES

10-12 Dinh Tien Hoang, Ben Nghe Ward, District 1, Ho Chi Minh City, Vietnam
Phone: (+84) 838 293 828 Website: http://hcmussh.edu.vn/

Letter to the Board of Presidents of the University of Social Sciences and Humanities requesting clearance to carry out research

May 2014

Dear Prof. Vo Van Sen and Members of the Board,
I am Ngo Thi Huyen working for the University of Social Sciences and Humanities as a lecturer from 2009 to present. I am currently pursuing a postgraduate programme leading to a doctoral degree in Information Science from Northumbria University, United Kingdom. I now wish to seek ethical approval from the Board to carry out my PhD research.

I would be grateful for this ethical approval and for your support. I wish to conduct a study which aims to investigate the practice of information literacy teaching and learning in Vietnam's upper secondary schools.

My data collection techniques may include questionnaires, interviews and an analysis of documents, such as reports, documents related to information literacy in-practice initiatives and teachers' resources. The participants of the study comprise four groups of people in selected institutions: students (age 15-18), librarians, teachers and administrators. The research involves working with children and will take place in Vietnam. Therefore, I wish to obtain a letter of ethical approval from you to ensure that I can carry out the research. The letter also confirms that (1) I am a suitable person for working with children, and (2) I do not have *criminal convictions and will not harm a child through my actions.* I will observe the highest possible ethical standards whilst carrying out this research. The study adheres to Northumbria University's ethical guidelines and procedures.

It is part of the project approval process at Northumbria University that ethical approval is obtained before the research can commence.

Regards,

Ngo Thi Huyen

PhD student
Department of Mathematics and Information Sciences
School of Computing, Engineering & Information Sciences
Northumbria University
Pandon Building, Camden Street
Newcastle upon Tyne
NE2 1XE

VIETNAM NATIONAL UNIVERSITY – HO CHI MINH CITY
UNIVERSITY OF SOCIAL SCIENCES AND HUMANITIES

10-12 Dinh Tien Hoang, Ben Nghe Ward, District 1, Ho Chi Minh City, Vietnam
Phone: (+84) 838 293 828 Website: http://hcmussh.edu.vn/

Letter of ethical approval from the Board of Presidents of University of Social Sciences and Humanities

May 2014

To whom it may concern,

I confirm that Ms. Ngo Thi Huyen is currently working for University of Social Sciences and Humanities as a lecturer. After checking criminal record for employment purpose, I also confirm that she does not have criminal convictions and is a suitable person for working with children. Ms. Ngo Thi Huyen has the permission of this Board of Presidents to carry out the research, as described above.

Signed and Stamped

ĐẠI HỌC QUỐC GIA TP. HỒ CHÍ MINH
TRƯỜNG ĐẠI HỌC KHOA HỌC XÃ HỘI & NHÂN VĂN

President
Prof. Dr. Vo Van Sen

Appendix 3. Letter of ethical approval from the police department

Socialist Republic of Vietnam
Independence - Freedom - Happiness
--------o0o--------

APPLICATION FOR ETHICAL APPROVAL

To: Head of Police Department,
Lo 25 Commune, Thong Nhat District, Dong Nai Province, Vietnam

Full name: **NGO THI HUYEN**
Date of birth: 02/11/1987 Sex: Female
Place of birth: Dong Nai Nationality: Vietnamese
ID card number: [redacted]
Date of issue: 03/04/2010 Place of issue: Dong Nai
Occupation: Lecturer, University of Social Sciences and Humanities Ho Chi Minh City
Residential address: 112, Hamlet 2, Lo 25 Commune, Thong Nhat District, Dong Nai Province, Vietnam
Address in UK: Flat A, 24 Cloth Market, Newcastle upon Tyne, United Kingdom, NE1 1EE

I am currently pursuing a postgraduate programme leading to a doctoral degree in Information Science from Northumbria University, United Kingdom. I now wish to seek ethical approval from the police department to carry out my PhD research.

I would be grateful for this ethical approval and for your support. I wish to conduct a study which aims to investigate the practice of information literacy teaching and learning in Vietnam's upper secondary schools.

My data collection techniques may include questionnaires, interviews and an analysis of documents, such as reports, documents related to information literacy in-practice initiatives and teachers' resources. The participants of the study comprise four groups of people in selected institutions: students (age 15-18), librarians, teachers and administrators. The research involves working with children and will take place in Vietnam. Therefore, I wish to obtain a letter of ethical approval from you to ensure that I can carry out the research. The letter also confirms that (1) I am a suitable person for working with children, and (2) I do not have *criminal convictions and will not harm a child through my actions.* I will observe the highest possible ethical standards whilst carrying out this research. The study adheres to Northumbria University's ethical guidelines and procedures.

It is part of the project approval process at Northumbria University that ethical approval is obtained before the research can commence.

Newcastle, date 10/7/2014
Signature

Ngo Thi Huyen

Socialist Republic of Vietnam
Independence - Freedom - Happiness
--------o0o--------

LETTER OF ETHICAL APPROVAL

To whom it may concern,

I confirm that:
Ms. Ngo Thi Huyen,
Date of birth: 02/11/1987 Sex: Female
Place of birth: Dong Nai Nationality: Vietnamese
ID card number: [redacted]
Date of issue: 03/04/2010 Place of issue: Dong Nai
Occupation: Lecturer, University of Social Sciences and Humanities Ho Chi Minh City
Residential address: 112, Hamlet 2, Lo 25 Commune, Thong Nhat District, Dong Nai Province, Vietnam
Address in UK: Flat A, 24 Cloth Market, Newcastle upon Tyne, United Kingdom, NE1 1EE
has been approved to carry out the research, as described in her application for ethical approval. After checking criminal record, I also confirm that she does not have criminal convictions and is a suitable person for working with children.

Yours faithfully,

Signed and Stamped

Head of Police Department

Xã lộ 25, Ngày 15 Tháng 7 Năm 2014
TRƯỞNG CA. XÃ

Nguyễn Văn Nhã

Appendix 4. Letter to the Board of School Management requesting permission to carry out the research

LETTER TO THE BOARD OF SCHOOL MANAGEMENT REQUESTING PERMISSION TO CARRY OUT THE RESEARCH

Dear Members of the Board,

I am Ngo Thi Huyen, a lecturer of the University of Social Sciences and Humanities Ho Chi Minh City. I am currently pursuing a postgraduate programme leading to a doctoral degree in Information Science from Northumbria University, United Kingdom. I now wish to seek the permission from the Board to carry out my PhD research in ……

I would be grateful for your permission and for your support. I wish to conduct a study which aims to investigate the practice of information literacy teaching and learning in Vietnam's upper secondary schools. This research is funded by the Ministry of Education and Training, Vietnam. This research is a part of the PhD programme in Information Science at Northumbria University, Newcastle upon Tyne, United Kingdom. It is expected to complete in three years from 2014 to 2017.

My data collection techniques may include questionnaires, interviews and an analysis of documents, such as reports, documents related to information literacy in-practice initiatives and teachers' resources. The participants of the study comprise four groups of people in selected institutions: students (age 15-18), librarians, teachers and administrators.

The data provided by participants will be presented in anonymous form. Also, I will not name the school without permission. The data collected from your school will be included in the content of the researcher's PhD thesis and other publications, such as articles and book chapters authored by the named researcher. It is also edited and used as part of presentations at conferences. There is no direct benefit for taking part in this research. However, the outcome of this research may be useful to your school, because findings and discussion of the study will allow upper secondary schools to determine effective approaches to information literacy learning and teaching in order to enhance students' learning. Furthermore, recommendations of this research may be helpful in the design of an information literacy programme in upper secondary schools. I will observe the highest possible ethical standards whilst carrying out this research. The study adheres to Northumbria University's ethical guidelines and procedures.

If you have any questions or concerns, please contact me at:

- Huyen Thi Ngo (Researcher): huyen.ngo@northumbria.ac.uk or ngohuyen87@gmail.com
- Dr. Geoff Walton (Principal Supervisor): geoff.walton@northumbria.ac.uk

If you decide to provide me the permission to carry out the research in your school, you will be given this letter to keep and be asked to sign a consent form below.

Regards,
Huyen Thi Ngo
PhD student
Department of Mathematics and Information Sciences
School of Computing, Engineering & Information Sciences
Northumbria University, Pandon Building, Camden Street
Newcastle upon Tyne, NE2 1XE

LETTER FOR INSTITUTIONAL CONSENT

To whom it may concern,

I have read the letter and give consent for the study entitled "Examining the practice of information literacy teaching and learning in upper secondary schools in Vietnam" by Ms. Ngo Thi Huyen to be conducted at ……

[The institution may add any other appropriate requirements.]

Title of person signing:

Signature:	Date:

THƯ XIN ĐƯỢC CHẤP THUẬN THỰC HIỆN ĐỀ TÀI NGHIÊN CỨU

Kính gửi Ban Giám Hiệu trường…,
Tôi tên là Ngô Thị Huyền, hiện nay đang là giảng viên của trường Đại học Khoa học Xã hội và Nhân văn Tp. Hồ Chí Minh, đồng thời là nghiên cứu sinh tại trường Đại học Northumbria, Anh quốc. Nay tôi viết thư này để xin được chấp thuận thực hiện đề tài nghiên cứu tiến sĩ của tôi tại trường….

Tôi rất lấy làm biết ơn sự cho phép và hỗ trợ của quý trường. Hiện nay tôi đang thực hiện đề tài nghiên cứu "Khảo sát thực tiễn hoạt động giảng dạy và học tập kiến thức thông tin tại các trường trung học phổ thông tại Việt Nam" với mục đích là nghiên cứu thực tiễn hoạt động giảng dạy và học tập kiến thức thông tin tại các trường trung học phổ thông tại Việt Nam nhằm đề xuất những cách tiếp cận hiệu quả khi triển khai chương trình đào tạo kiến thức thông tin tại Việt Nam. Nghiên cứu này được tài trợ một phần bởi Bộ Giáo dục và Đào tạo Việt Nam đồng thời cũng là một phần trong chương trình nghiên cứu tiến sĩ của tôi tại trường ĐH Northumbria, Newcastle upon Tyne, Anh quốc và được thực hiện trong vòng 3 năm từ 2014 đến 2017.

Phương pháp thu thập dữ liệu của tôi bao gồm khảo sát bằng bảng hỏi, phỏng vấn, và phân tích tài liệu liên quan đến hoạt động giảng dạy kiến thức thông tin tại quý trường như là chương trình giảng dạy, chính sách, hướng dẫn, v.v. Đối tượng được khảo sát bao gồm sinh viên (tuổi từ 15-18), cán bộ thư viện, giáo viên và cán bộ quản lý.

Tôi sẽ đảm bảo giữ bí mật thông tin và sẽ không nêu tên của quý trường nếu không được cho phép. Dữ liệu thu thập từ quý trường sẽ được đề cập đến trong luận án tiến sĩ của tôi và các ấn phẩm xuất bản khác như là bài báo, chương sách mang tên tôi, và có thể được chỉnh sửa và sử dụng như là một phần của các bài thuyết trình tại các hội thảo. Mặc dù không có những lợi ích trực tiếp cho việc tham gia nghiên cứu này. Tuy nhiên, sản phẩm của nghiên cứu này sẽ hữu dụng cho quý trường vì kết quả cũng như những thảo luận của nghiên cứu sẽ cho phép các trường trung học phổ thông xác định được những cách tiếp cận hiệu quả và phù hợp cho việc giáo dục kiến thức thông tin nhằm nâng cao hoạt động học tập của học sinh; đồng thời kết quả nghiên cứu cũng hữu ích cho việc thiết kế các chương trình giảng dạy kiến thức thông tin tại các trường trung học phổ thông tại Việt Nam. Tôi xin cam đoan rằng, trong khi thực hiện nghiên cứu này, tôi sẽ tuân thủ đầy đủ các tiêu chuẩn về đạo đức nghiên cứu.

Nếu quý trường có bất kỳ câu hỏi hay vấn đề quan ngại nào, vui lòng liên hệ với tôi tại:

- Ngô Thị Huyền (Nghiên cứu sinh): huyen.ngo@northumbria.ac.uk hoặc ngohuyen87@gmail.com
- TS. Geoff Walton (giáo sư hướng dẫn): geoff.walton@northumbria.ac.uk

Nếu quý trường quyết định cho phép tôi thực hiện nghiên cứu tại đơn vị, quý trường sẽ được cung cấp một bản sao của lá thư này và ký vào bản chấp thuận.
Chân thành cảm ơn
Ngô Thị Huyền
Department of Mathematics and Information Sciences
School of Computing, Engineering & Information Sciences
Northumbria University, Pandon Building, Camden Street
Newcastle upon Tyne
NE2 1XE

THƯ CHẤP THUẬN CỦA NHÀ TRƯỜNG

Kính gửi các bộ phận có liên quan,

Tôi đã xem xét thư xin được thực hiện đề tài nghiên cứu tại Trường THPT… và đồng ý cho dự án nghiên cứu mang tên "Khảo sát thực tiễn hoạt động giảng dạy và học tập kiến thức thông tin tại các trường Trung học phổ thông tại Việt Nam" của Bà Ngô Thị Huyền được thực hiện tại Trường THPT….

[Nhà trường có thể đề xuất thêm các yêu cầu khác khi dự án nghiên cứu được thực hiện tại đơn vị]

Tên người ký:

Chữ ký:

Ngày

THƯ CHẤP THUẬN CỦA NHÀ TRƯỜNG

Kính gửi các bộ phận có liên quan,

Tôi đã xem xét thư xin được thực hiện đề tài nghiên cứu tại Trường T[redacted] và đồng ý cho dự án nghiên cứu mang tên "Khảo sát thực tiễn hoạt động giảng dạy và học tập kiến thức thông tin tại các trường Trung học phổ thông tại Việt Nam" của Bà Ngô Thị Huyền được thực hiện tại Trường T[redacted] với những nội dung đã được mô tả trong thư.

Trân trọng.

Tên người ký: Phan Thị Bích Thủy

Chữ ký: [redacted]

Ngày 17/6/2015

SỞ GIÁO DỤC VÀ ĐÀO TẠO THÀNH PHỐ HỒ CHÍ MINH
TRƯỜNG
TRUNG HỌC CƠ SỞ VÀ TRUNG HỌC PHỔ THÔNG

THƯ CHẤP THUẬN CỦA NHÀ TRƯỜNG

Kính gửi các bộ phận có liên quan,

Tôi đã xem xét thư xin được thực hiện đề tài nghiên cứu tại Trường [redacted] và đồng ý cho dự án nghiên cứu mang tên "Khảo sát thực tiễn hoạt động giảng dạy và học tập kiến thức thông tin tại các trường Trung học phổ thông tại Việt Nam" của Bà Ngô Thị Huyền được thực hiện tại Trường [redacted]

Trân trọng.

Tên người ký: KT. HIỆU TRƯỞNG
PHÓ HIỆU TRƯỞNG

Chữ ký: SỞ GIÁO DỤC VÀ ĐÀO TẠO THÀNH PHỐ HỒ CHÍ MINH TRƯỜNG TRUNG HỌC PHỔ THÔNG [redacted] Phan Thanh Phương

Ngày

THƯ CHẤP THUẬN CỦA NHÀ TRƯỜNG

Kính gửi các bộ phận có liên quan,

Tôi đã xem xét thư xin được thực hiện đề tài nghiên cứu tại Trường [redacted] và đồng ý cho dự án nghiên cứu mang tên "Khảo sát thực tiễn hoạt động giảng dạy và học tập kiến thức thông tin tại các trường Trung học phổ thông tại Việt Nam" của Bà Ngô Thị Huyền được thực hiện tại Trường T[redacted]

Trân trọng.

Tên người ký: [redacted]

Chữ ký:

SỞ GIÁO DỤC VÀ ĐÀO TẠO THÀNH PHỐ HỒ CHÍ MINH
TRƯỜNG TRUNG HỌC CƠ SỞ VÀ TRUNG HỌC PHỔ THÔNG [redacted]

Bùi Thế Vĩnh

Ngày 31.03.2015

Appendix 5. Information sheet for participants

INFORMATION SHEET FOR ADMINISTRATORS

Research Topic: Examining the practice of information literacy teaching and learning in upper secondary schools in Vietnam

Researcher: Huyen Thi Ngo

- Lecturer – University of Social Sciences and Humanities Ho Chi Minh City, Vietnam
- Postgraduate research student – Northumbria University, Newcastle, United Kingdom

Invitation: You are being invited to participate in this research. It is important that you understand why the research is being done and what your participation will involve before you decide whether you want to take part. Please take time to read the following information carefully and discuss it with other members of staff if you wish. If you have any questions or concerns, don't hesitate to contact me. Please take time to decide whether or not you wish to take part.

Thank you for reading this.

What is the purpose of the study?

The research aims to investigate the practice of information literacy teaching and learning in Vietnam's upper secondary schools.

Why have I been chosen?

You have been chosen because you are an administrator of an upper secondary school in Vietnam. This research will rely on data collected from administrators working for Vietnam's upper secondary schools to reach research aims. Administrators of other upper secondary schools in Vietnam may also be part of this research.

What will participation involve?

You will be invited to take part in an interview but no personally sensitive data will be collected and stored. Your responses will be tape recorded and made notes as well, and then transcribed into text form. Recordings of interviews will be deleted upon transcription. You would be very welcome to a copy of the final report. The interview can be carried out within the school or somewhere else would be more convenient for you. The interview will take approximately 30-40 minutes.

A Vietnamese version of the interview questions will be provided to you to ensure that you can understand clearly the content of the questions. Your responses will be translated into English to serve the research.

Do I have to take part?

Taking part in this research is totally voluntary so you can decide whether or not you wish to take part. If you decide to take part in this research, you would keep this information sheet and be asked to sign a consent form.

What rights do I have in the study?

You are free to decline to participate, or to withdraw from the research at any time, without experiencing any disadvantage. If you decide to withdraw from the research, you will have the option to a) leave the research without removing your contribution or b) leave the research and withdraw all your contribution. You have the right to access information

collected as part of the study. You will be told of any new information about adverse or beneficial effects related to the study that becomes available during the study and may have an impact on you.

What are the possible risks and disadvantages of taking part?

This research poses no risk to you.

What are the possible benefits of taking part?

There is no direct benefit for taking part in this research. However, the outcome of this research may be useful to your school, because findings and discussion of the study will allow upper secondary schools to determine effective approaches to information literacy learning and teaching in order to enhance students' learning. Furthermore, recommendations of this research might be helpful in the design of an information literacy programme in upper secondary schools.

Will my taking part in this research be kept confidential?

Your personal details will be kept strictly confidential so that you cannot be identified from what you said.

What would happen to the results of the research?

During this research, information gathered from you will be transformed into digital form and stored in password protected drives and folders. Data will be stored securely and backed up on an external hard drive. It would be kept till the end of the research and publication of findings. Afterwards, the data would be safely and securely disposed of or deposited with Northumbria University, Newcastle upon Tyne.

The data collected from you will be translated into English and included in the content of the researcher's PhD thesis and other publications, such as articles and book chapters authored by the named researcher. It is also edited and used as part of presentations at conferences.

What if something goes wrong?

If something goes wrong during the interview, please email your complaints to the researcher's supervisor - Dr. Geoff Walton at geoff.walton@northumbria.ac.uk.

Who is funding the research?

This research is funded by the Ministry of Education and Training, Vietnam. This research is a part of the PhD programme in Information Science at Northumbria University, Newcastle upon Tyne, United Kingdom. It is expected to complete in three years from 2014 to 2017.

Who has ethically reviewed the research?

This research adheres to Northumbria University's ethical guidelines and procedures. This research has been reviewed for ethical issues by the Research Ethic Committee of the Faculty of Engineering and Environment, as part of the University Research Ethics Committee (UREC) in Northumbria University.

Contact for further information

If you have any questions or concerns, please contact me at:

- Huyen Thi Ngo (Researcher): huyen.ngo@northumbria.ac.uk or ngohuyen87@gmail.com
- Dr. Geoff Walton (Principal Supervisor): geoff.walton@northumbria.ac.uk

If you decide to take part, you will be given this information sheet to keep and be asked to sign a consent form.

Thank you

Đề tài: Nghiên cứu thực tiễn giảng dạy và học tập kiến thức thông tin ở các trường Trung học Phổ thông tại Việt Nam.

Chủ đề tài: Ngô Thị Huyền

- Giảng viên – Trường ĐH Khoa học Xã hội và Nhân văn Tp. Hồ Chí Minh, Việt Nam.
- Nghiên cứu sinh – Trường ĐH Northumbria, Newcastle, Anh quốc.

Thư mời: Tôi trân trọng kính mời Anh/chị tham gia vào đề tài nghiên cứu này. Do đó việc Anh/chị hiểu tại sao nghiên cứu này được thực hiện và vai trò tham gia của mình trong đề tài này rất quan trọng để giúp Anh/chị quyết định là có nên tham gia vào đề tài này hay không. Anh/chị vui lòng bớt chút thời gian để đọc các thông tin sau và có thể thảo luận với các nhân viên khác nếu Anh/chị muốn. Nếu Anh/chị có bất kỳ câu hỏi hay vấn đề quan ngại nào, xin vui lòng liên lạc với tôi. Anh/chị vui lòng bớt chút thời gian để quyết định xem Anh/chị có muốn tham gia vào nghiên cứu này hay không.

Chân thành cảm ơn vì đã đọc những thông tin này.

Mục tiêu của nghiên cứu này là gì?

Mục tiêu của đề tài này là nghiên cứu thực tiễn việc giảng dạy và học tập kiến thức thông tin ở các trường Trung học Phổ thông tại Việt Nam.

Tại sao tôi lại được lựa chọn tham gia vào nghiên cứu này?

Anh/chị được lựa chọn bởi vì Anh/chị là cán bộ làm công tác quản lý tại một trường THPT tại Việt Nam. Nghiên cứu này dựa vào những dữ liệu được thu thập từ cán bộ quản lý làm việc cho các trường THPT tại Việt Nam để có thể đạt được mục tiêu nghiên cứu đã đề ra. Cán bộ quản lý tại các trường THPT khác tại Việt Nam cũng có thể trở thành một phần của nghiên cứu này.

Tôi phải làm gì khi tham gia vào nghiên cứu này?

Anh/chị sẽ được mời tham gia vào một buổi phỏng vấn nhưng tôi đảm bảo rằng không có bất kỳ thông tin nhạy cảm cá nhân nào được thu thập và lưu giữ. Câu trả lời của Anh/chị sẽ được thu âm và ghi chú lại, sau đó sẽ được sao chép chuyển thể sang dạng văn bản. Bản thu âm của buổi phỏng vấn sẽ được xóa bỏ sau khi hoàn thành việc sao chép chuyển thể sang dạng văn bản. Anh/chị cũng sẽ được cung cấp một bản sao của bản báo cáo cuối cùng. Buổi phỏng vấn sẽ được diễn ra tại trường hoặc bất cứ nơi nào thuận lợi cho Anh/chị. Buổi phỏng vấn sẽ diễn ra trong vòng 30-40 phút.

Một phiên bản tiếng Việt của các câu hỏi phỏng vấn sẽ được cung cấp cho Anh/chị để bảo đảm rằng Anh/chị có thể hiểu một cách rõ ràng nội dung của công cụ nghiên cứu này. Các câu trả lời của Anh/chị sẽ được dịch sang tiếng Anh để phục vụ cho nghiên cứu này.

Có phải tôi bắt buộc phải tham gia vào nghiên cứu này?

Việc tham gia vào nghiên cứu này là hoàn toàn tự nguyện vì thế Anh/chị có thể quyết định là có muốn tham gia hay không. Nếu Anh/chị đồng ý tham gia vào nghiên cứu này, Anh/chị sẽ giữ tờ thông tin này và được yêu cầu ký vào thư chấp thuận tham gia.

Quyền của tôi khi tham gia vào nghiên cứu này là gì?

Anh/chị có quyền từ chối tham gia hoặc từ bỏ tham gia vào nghiên cứu này bất cứ lúc nào và không gặp bất kỳ một bất lợi nào. Nếu Anh/chị quyết định từ bỏ việc tham gia vào

nghiên cứu này, Anh/chị sẽ có hai lựa chọn: a) rời bỏ nghiên cứu này mà không hủy bỏ những đóng góp của Anh/chị đến thời điểm đó hoặc b) rời bỏ nghiên cứu này và hủy bỏ tất cả những đóng góp của Anh/chị đến thời điểm đó. Anh/chị cũng có quyền truy cập vào thông tin đã thu thập được như là một phần của nghiên cứu này. Anh/chị sẽ được thông báo các thông tin mới về những ảnh hưởng có lợi hoặc bất lợi liên quan đến nghiên cứu này mà có thể ảnh hưởng đến Anh/chị.

Những rủi ro và bất lợi khi tham gia vào nghiên cứu này là gì?

Nghiên cứu này không gây ra bất cứ rủi ro nào cho Anh/chị.

Những lợi ích khi tham gia vào nghiên cứu này là gì?

Không có những lợi ích trực tiếp từ việc tham gia vào nghiên cứu này. Tuy nhiên, sản phẩm của nghiên cứu này có thể rất hữu ích cho đơn vị của Anh/chị bởi vì kết quả và thảo luận của nghiên cứu này sẽ cho phép các trường THPT xác định được những cách tiếp cận hiệu quả đối với việc giảng dạy và học tập kiến thức thông tin để nâng cao hoạt động học tập của học sinh. Đồng thời, những đề xuất của nghiên cứu này có thể rất hữu ích cho việc thiết kế một chương trình giảng dạy kiến thức thông tin tại các trường THPT.

Việc tham gia của tôi vào nghiên cứu này sẽ được giữ bí mật?

Thông tin cá nhân của Anh/chị sẽ được giữ bí mật, vì thế Anh/chị không thể bị nhận biết từ những gì mà Anh/chị nói.

Chuyện gì sẽ xảy ra với kết quả của nghiên cứu này?

Trong suốt quá trình nghiên cứu, thông tin thu thập được từ Anh/chị sẽ được chuyển đổi sang hình thức số hóa và lưu giữ trong những thư mục và đĩa cứng có mật khẩu. Dữ liệu sẽ được lưu giữ an toàn và sao chép dự phòng trong một ổ đĩa cứng bên ngoài. Nó sẽ được giữ cho đến khi nghiên cứu này kết thúc và kết quả được công bố. Sau cùng, dữ liệu sẽ được gửi về và lưu giữ an toàn và bảo mật tại trường ĐH Northumbria, Newcastle.

Dữ liệu thu thập từ Anh/chị sẽ được dịch sang tiếng Anh và được đưa vào luận án tiến sĩ của tôi và những ấn phẩm khác như là các bài báo, chương sách dưới tên tôi, và nó cũng sẽ được chỉnh sửa và sử dụng trong các bài thuyết trình tại các hội thảo.

Tôi phải làm gì nếu có điều gì sai phạm xảy ra?

Nếu có điều gì sai phạm xảy ra trong suốt quá trình của buổi phỏng vấn, Anh/chị có thể gửi những khiếu nại của mình đến người hướng dẫn của tôi – TS. Geoff Walton tại địa chỉ geoff.walton@northumbria.ac.uk.

Ai tài trợ cho nghiên cứu này?

Nghiên cứu này được tài trợ một phần bởi Bộ Giáo dục và Đào tạo Việt Nam. Nghiên cứu này là một phần trong chương trình đào tạo tiến sĩ ngành Thông tin học tại trường ĐH Northumbria, Newcastle, Anh quốc và được lên kế hoạch là hoàn thành trong 3 năm từ tháng 2/2014 đến 2/2017.

Ai sẽ xem xét những vấn đề liên quan đến đạo đức nghiên cứu của đề tài này?

Nghiên cứu này tuân theo những hướng dẫn và thủ tục về đạo đức nghiên cứu khoa học của trường ĐH Northumbria. Vấn đề về đạo đức nghiên cứu của đề tài này được xem xét bởi Hội đồng đạo đức nghiên cứu khoa học của Khoa Công nghệ và Môi trường, là một bộ phận thuộc Hội đồng đạo đức nghiên cứu khoa học của trường ĐH Northumbria.

Thông tin liên lạc

Nếu Anh/chị có bất kỳ câu hỏi hay vấn đề quan ngại nào, vui lòng liên lạc với tôi tại địa chỉ sau:

- Ngô Thị Huyền (Chủ đề tài): huyen.ngo@northumbria.ac.uk hoặc ngohuyen87@gmail.com
- TS. Geoff Walton (Giáo viên hướng dẫn chính): geoff.walton@northumbria.ac.uk

Nếu Anh/chị quyết định tham gia đề tài này, Anh/chị sẽ được cung cấp 1 tờ thông tin này và được yêu cầu ký vào thư chấp thuận tham gia đề tài.

Chân thành cảm ơn Anh/chị.

INFORMATION SHEET FOR LIBRARIANS

Research Topic: Examining the practice of information literacy teaching and learning in upper secondary schools in Vietnam

Researcher: Huyen Thi Ngo

- Lecturer – University of Social Sciences and Humanities Ho Chi Minh City, Vietnam
- Postgraduate research student – Northumbria University, Newcastle, United Kingdom

Invitation: You are being invited to participate in this research. It is important that you understand why the research is being done and what your participation will involve before you decide whether you want to take part. Please take time to read the following information carefully and discuss it with other members of staff if you wish. If you have any questions or concerns, don't hesitate to contact me. Please take time to decide whether or not you wish to take part.

Thank you for reading this.

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The research aims to investigate the practice of information literacy teaching and learning in Vietnam's upper secondary schools.

Why have I been chosen?
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What will participation involve?
You will be invited to take part in an interview but no personally sensitive data will be collected and stored. Your responses will be tape recorded and made notes as well, and then transcribed into text form. Recordings of interviews will be deleted upon transcription. You would be very welcome to a copy of the final report. The interview can be carried out within the school or somewhere else would be more convenient for you. The interview will take approximately 30-40 minutes.

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Taking part in this research is totally voluntary so you can decide whether or not you wish to take part. If you decide to take part in this research, you would keep this information sheet and be asked to sign a consent form.

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You are free to decline to participate, or to withdraw from the research at any time, without experiencing any disadvantage. If you decide to withdraw from the research, you will have the option to a) leave the research without removing your contribution or b) leave the research and withdraw all your contribution. You have the right to access information

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This research poses no risk to you.

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There is no direct benefit for taking part in this research. However, the outcome of this research may be useful to your school, because findings and discussion of the study will allow upper secondary schools to determine effective approaches to information literacy learning and teaching in order to enhance students' learning. Furthermore, recommendations of this research might be helpful in the design of an information literacy programme in upper secondary schools.

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Your personal details will be kept strictly confidential so that you cannot be identified from what you said.

What would happen to the results of the research?

During this research, information gathered from you will be transformed into digital form and stored in password protected drives and folders. Data will be stored securely and backed up on an external hard drive. It would be kept till the end of the research and publication of findings. Afterwards, the data would be safely and securely disposed of or deposited with Northumbria University, Newcastle upon Tyne.

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If something goes wrong during the interview, please email your complaints to the researcher's supervisor - Dr. Geoff Walton at geoff.walton@northumbria.ac.uk.

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This research is funded by the Ministry of Education and Training, Vietnam. This research is a part of the PhD programme in Information Science at Northumbria University, Newcastle upon Tyne, United Kingdom. It is expected to complete in three years from 2014 to 2017.

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This research adheres to Northumbria University's ethical guidelines and procedures. This research has been reviewed for ethical issues by the Research Ethic Committee of the Faculty of Engineering and Environment, as part of the University Research Ethics Committee (UREC) in Northumbria University.

Contact for further information

If you have any questions or concerns, please contact me at:

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Thank you

Đề tài: Nghiên cứu thực tiễn giảng dạy và học tập kiến thức thông tin ở các trường Trung học Phổ thông tại Việt Nam.

Chủ đề tài: Ngô Thị Huyền

- Giảng viên – Trường ĐH Khoa học Xã hội và Nhân văn Tp. Hồ Chí Minh, Việt Nam.
- Nghiên cứu sinh – Trường ĐH Northumbria, Newcastle, Anh quốc.

Thư mời: Tôi trân trọng kính mời Anh/chị tham gia vào đề tài nghiên cứu này. Do đó việc Anh/chị hiểu tại sao nghiên cứu này được thực hiện và vai trò tham gia của mình trong đề tài này rất quan trọng để giúp Anh/chị quyết định là có nên tham gia vào đề tài này hay không. Anh/chị vui lòng bớt chút thời gian để đọc các thông tin sau và có thể thảo luận với các nhân viên khác nếu Anh/chị muốn. Nếu Anh/chị có bất kỳ câu hỏi hay vấn đề quan ngại nào, xin vui lòng liên lạc với tôi. Anh/chị vui lòng bớt chút thời gian để quyết định xem Anh/chị có muốn tham gia vào nghiên cứu này hay không.

Chân thành cảm ơn vì đã đọc những thông tin này.

Mục tiêu của nghiên cứu này là gì?

Mục tiêu của đề tài này là nghiên cứu thực tiễn việc giảng dạy và học tập kiến thức thông tin ở các trường Trung học Phổ thông tại Việt Nam.

Tại sao tôi lại được lựa chọn tham gia vào nghiên cứu này?

Anh/chị được lựa chọn bởi vì Anh/chị là cán bộ thư viện tại một trường THPT tại Việt Nam. Nghiên cứu này dựa vào những dữ liệu được thu thập từ cán bộ thư viện làm việc cho các trường THPT tại Việt Nam để có thể đạt được mục tiêu nghiên cứu đã đề ra. Các cán bộ thư viện tại trường của Anh/chị và các trường THPT khác tại Việt Nam cũng có thể trở thành một phần của nghiên cứu này.

Tôi phải làm gì khi tham gia vào nghiên cứu này?

Anh/chị sẽ được mời tham gia vào một buổi phỏng vấn nhưng tôi đảm bảo rằng không có bất kỳ thông tin nhạy cảm cá nhân nào được thu thập và lưu giữ. Câu trả lời của Anh/chị sẽ được thu âm và ghi chú lại, sau đó sẽ được sao chép chuyển thể sang dạng văn bản. Bản thu âm của buổi phỏng vấn sẽ được xóa bỏ sau khi hoàn thành việc sao chép chuyển thể sang dạng văn bản. Anh/chị cũng sẽ được cung cấp một bản sao của bản báo cáo cuối cùng. Buổi phỏng vấn sẽ được diễn ra tại trường hoặc bất cứ nơi nào thuận lợi cho Anh/chị. Buổi phỏng vấn sẽ diễn ra trong vòng 30-40 phút.

Một phiên bản tiếng Việt của các câu hỏi phỏng vấn sẽ được cung cấp cho Anh/chị để bảo đảm rằng Anh/chị có thể hiểu một cách rõ ràng nội dung của công cụ nghiên cứu này. Các câu trả lời của Anh/chị sẽ được dịch sang tiếng Anh để phục vụ cho nghiên cứu này.

Có phải tôi bắt buộc phải tham gia vào nghiên cứu này?

Việc tham gia vào nghiên cứu này là hoàn toàn tự nguyện vì thế Anh/chị có thể quyết định là có muốn tham gia hay không. Nếu Anh/chị đồng ý tham gia vào nghiên cứu này, Anh/chị sẽ giữ tờ thông tin này và được yêu cầu ký vào thư chấp thuận tham gia.

Quyền của tôi khi tham gia vào nghiên cứu này là gì?

Anh/chị có quyền từ chối tham gia hoặc từ bỏ tham gia vào nghiên cứu này bất cứ lúc nào và không gặp bất kỳ một bất lợi nào. Nếu Anh/chị quyết định từ bỏ việc tham gia vào

nghiên cứu này, Anh/chị sẽ có hai lựa chọn: a) rời bỏ nghiên cứu này mà không hủy bỏ những đóng góp của Anh/chị đến thời điểm đó hoặc b) rời bỏ nghiên cứu này và hủy bỏ tất cả những đóng góp của Anh/chị đến thời điểm đó. Anh/chị cũng có quyền truy cập vào thông tin đã thu thập được như là một phần của nghiên cứu này. Anh/chị sẽ được thông báo các thông tin mới về những ảnh hưởng có lợi hoặc bất lợi liên quan đến nghiên cứu này mà có thể ảnh hưởng đến Anh/chị.

Những rủi ro và bất lợi khi tham gia vào nghiên cứu này là gì?

Nghiên cứu này không gây ra bất cứ rủi ro nào cho Anh/chị.

Những lợi ích khi tham gia vào nghiên cứu này là gì?

Không có những lợi ích trực tiếp từ việc tham gia vào nghiên cứu này. Tuy nhiên, sản phẩm của nghiên cứu này có thể rất hữu ích cho đơn vị của Anh/chị bởi vì kết quả và thảo luận của nghiên cứu này sẽ cho phép các trường THPT xác định được những cách tiếp cận hiệu quả đối với việc giảng dạy và học tập kiến thức thông tin để nâng cao hoạt động học tập của học sinh. Đồng thời, những đề xuất của nghiên cứu này có thể rất hữu ích cho việc thiết kế một chương trình giảng dạy kiến thức thông tin tại các trường THPT.

Việc tham gia của tôi vào nghiên cứu này sẽ được giữ bí mật?

Thông tin cá nhân của Anh/chị sẽ được giữ bí mật, vì thế Anh/chị không thể bị nhận biết từ những gì mà Anh/chị nói.

Chuyện gì sẽ xảy ra với kết quả của nghiên cứu này?

Trong suốt quá trình nghiên cứu, thông tin thu thập được từ Anh/chị sẽ được chuyển đổi sang hình thức số hóa và lưu giữ trong những thư mục và đĩa cứng có mật khẩu. Dữ liệu sẽ được lưu giữ an toàn và sao chép dự phòng trong một ổ đĩa cứng bên ngoài. Nó sẽ được giữ cho đến khi nghiên cứu này kết thúc và kết quả được công bố. Sau cùng, dữ liệu sẽ được gửi về và lưu giữ an toàn và bảo mật tại trường ĐH Northumbria, Newcastle.

Dữ liệu thu thập từ Anh/chị sẽ được dịch sang tiếng Anh và được đưa vào luận án tiến sĩ của tôi và những ấn phẩm khác như là các bài báo, chương sách dưới tên tôi, và nó cũng sẽ được chỉnh sửa và sử dụng trong các bài thuyết trình tại các hội thảo.

Tôi phải làm gì nếu có điều gì sai phạm xảy ra?

Nếu có điều gì sai phạm xảy ra trong suốt quá trình của buổi phỏng vấn, Anh/chị có thể gửi những khiếu nại của mình đến người hướng dẫn của tôi – TS. Geoff Walton tại địa chỉ geoff.walton@northumbria.ac.uk.

Ai tài trợ cho nghiên cứu này?

Nghiên cứu này được tài trợ một phần bởi Bộ Giáo dục và Đào tạo Việt Nam. Nghiên cứu này là một phần trong chương trình đào tạo tiến sĩ ngành Thông tin học tại trường ĐH Northumbria, Newcastle, Anh quốc và được lên kế hoạch là hoàn thành trong 3 năm từ tháng 2/2014 đến 2/2017.

Ai sẽ xem xét những vấn đề liên quan đến đạo đức nghiên cứu của đề tài này?

Nghiên cứu này tuân theo những hướng dẫn và thủ tục về đạo đức nghiên cứu khoa học của trường ĐH Northumbria. Vấn đề về đạo đức nghiên cứu của đề tài này được xem xét bởi Hội đồng đạo đức nghiên cứu khoa học của Khoa Công nghệ và Môi trường, là một bộ phận thuộc Hội đồng đạo đức nghiên cứu khoa học của trường ĐH Northumbria.

Thông tin liên lạc

Nếu Anh/chị có bất kỳ câu hỏi hay vấn đề quan ngại nào, vui lòng liên lạc với tôi tại địa chỉ sau:

- Ngô Thị Huyền (Chủ đề tài): huyen.ngo@northumbria.ac.uk hoặc ngohuyen87@gmail.com
- TS. Geoff Walton (Giáo viên hướng dẫn chính): geoff.walton@northumbria.ac.uk

Nếu Anh/chị quyết định tham gia đề tài này, Anh/chị sẽ được cung cấp 1 tờ thông tin này và được yêu cầu ký vào thư chấp thuận tham gia đề tài.

Chân thành cảm ơn Anh/chị.

INFORMATION SHEET FOR TEACHERS

Research Topic: Examining the practice of information literacy teaching and learning in upper secondary schools in Vietnam

Researcher: Huyen Thi Ngo

- Lecturer – University of Social Sciences and Humanities Ho Chi Minh City, Vietnam
- Postgraduate research student – Northumbria University, Newcastle, United Kingdom

Invitation: You are being invited to participate in this research. It is important that you understand why the research is being done and what your participation will involve before you decide whether you want to take part. Please take time to read the following information carefully and discuss it with other members of staff if you wish. If you have any questions or concerns, don't hesitate to contact me. Please take time to decide whether or not you wish to take part.

Thank you for reading this.

What is the purpose of the study?

The research aims to investigate the practice of information literacy teaching and learning in Vietnam's upper secondary schools.

Why have I been chosen?

You have been chosen because you are a teacher of an upper secondary school in Vietnam. This research will rely on data collected from teachers working for upper secondary schools in Vietnam to reach research aims. Teachers of your school and other upper secondary schools in Vietnam may also be part of this research.

What will participation involve?

You will be invited to take part in an interview but no personally sensitive data will be collected and stored. Your responses will be tape recorded and made notes as well, and then transcribed into text form. Recordings of interviews will be deleted upon transcription. You would be very welcome to a copy of the final report. The interview can be carried out within the school or somewhere else would be more convenient for you. The interview will take approximately 30-40 minutes.

A Vietnamese version of the interview questions will be provided to you to ensure that you can understand clearly the content of the questions. Your responses will be translated into English to serve the research.

Do I have to take part?

Taking part in this research is totally voluntary so you can decide whether or not you wish to take part. If you decide to take part in this research, you would keep this information sheet and be asked to sign a consent form.

What rights do I have in the study?

You are free to decline to participate, or to withdraw from the research at any time, without experiencing any disadvantage. If you decide to withdraw from the research, you will have the option to a) leave the research without removing your contribution or b) leave the research and withdraw all your contribution. You have the right to access information

collected as part of the study. You will be told of any new information about adverse or beneficial effects related to the study that becomes available during the study and may have an impact on you.

What are the possible risks and disadvantages of taking part?

This research poses no risk to you.

What are the possible benefits of taking part?

There is no direct benefit for taking part in this research. However, the outcome of this research may be useful to your school, because findings and discussion of the study will allow upper secondary schools to determine effective approaches to information literacy learning and teaching in order to enhance students' learning. Furthermore, recommendations of this research might be helpful in the design of an information literacy programme in upper secondary schools.

Will my taking part in this research be kept confidential?

Your personal details will be kept strictly confidential so that you cannot be identified from what you said.

What would happen to the results of the research?

During this research, information gathered from you will be transformed into digital form and stored in password protected drives and folders. Data will be stored securely and backed up on an external hard drive. It would be kept till the end of the research and publication of findings. Afterwards, the data would be safely and securely disposed of or deposited with Northumbria University, Newcastle upon Tyne.

The data collected from you will be translated into English and included in the content of the researcher's PhD thesis and other publications, such as articles and book chapters authored by the named researcher. It is also edited and used as part of presentations at conferences.

What if something goes wrong?

If something goes wrong during the interview, please email your complaints to the researcher's supervisor - Dr. Geoff Walton at geoff.walton@northumbria.ac.uk.

Who is funding the research?

This research is funded by the Ministry of Education and Training, Vietnam. This research is a part of the PhD programme in Information Science at Northumbria University, Newcastle upon Tyne, United Kingdom. It is expected to complete in three years from 2014 to 2017.

Who has ethically reviewed the research?

This research adheres to Northumbria University's ethical guidelines and procedures. This research has been reviewed for ethical issues by the Research Ethic Committee of the Faculty of Engineering and Environment, as part of the University Research Ethics Committee (UREC) in Northumbria University.

Contact for further information

If you have any questions or concerns, please contact me at:

- Huyen Thi Ngo (Researcher): huyen.ngo@northumbria.ac.uk or ngohuyen87@gmail.com
- Dr. Geoff Walton (Principal Supervisor): geoff.walton@northumbria.ac.uk

If you decide to take part, you will be given this information sheet to keep and be asked to sign a consent form.

Thank you

THÔNG TIN DÀNH CHO GIÁO VIÊN

Đề tài: Nghiên cứu thực tiễn giảng dạy và học tập kiến thức thông tin ở các trường Trung học Phổ thông tại Việt Nam.

Chủ đề tài: Ngô Thị Huyền

- Giảng viên – Trường ĐH Khoa học Xã hội và Nhân văn Tp. Hồ Chí Minh, Việt Nam.
- Nghiên cứu sinh – Trường ĐH Northumbria, Newcastle, Anh quốc.

Thư mời: Tôi trân trọng kính mời Anh/chị tham gia vào đề tài nghiên cứu này. Do đó việc Anh/chị hiểu tại sao nghiên cứu này được thực hiện và vai trò tham gia của mình trong đề tài này rất quan trọng để giúp Anh/chị quyết định là có nên tham gia vào đề tài này hay không. Anh/chị vui lòng bớt chút thời gian để đọc các thông tin sau và có thể thảo luận với các nhân viên khác nếu Anh/chị muốn. Nếu Anh/chị có bất kỳ câu hỏi hay vấn đề quan ngại nào, xin vui lòng liên lạc với tôi. Anh/chị vui lòng bớt chút thời gian để quyết định xem Anh/chị có muốn tham gia vào nghiên cứu này hay không.

Chân thành cảm ơn vì đã đọc những thông tin này.

Mục tiêu của nghiên cứu này là gì?

Mục tiêu của đề tài này là nghiên cứu thực tiễn việc giảng dạy và học tập kiến thức thông tin ở các trường Trung học Phổ thông tại Việt Nam.

Tại sao tôi lại được lựa chọn tham gia vào nghiên cứu này?

Anh/chị được lựa chọn bởi vì Anh/chị là giáo viên tại một trường THPT tại Việt Nam. Nghiên cứu này dựa vào những dữ liệu được thu thập từ các giáo viên làm việc cho các trường THPT tại Việt Nam để có thể đạt được mục tiêu nghiên cứu đã đề ra. Các giáo viên tại trường của Anh/chị và các trường THPT khác tại Việt Nam cũng có thể trở thành một phần của nghiên cứu này.

Tôi phải làm gì khi tham gia vào nghiên cứu này?

Anh/chị sẽ được mời tham gia vào một buổi phỏng vấn nhưng tôi đảm bảo rằng không có bất kỳ thông tin nhạy cảm cá nhân nào được thu thập và lưu giữ. Câu trả lời của Anh/chị sẽ được thu âm và ghi chú lại, sau đó sẽ được sao chép chuyển thể sang dạng văn bản. Bản thu âm của buổi phỏng vấn sẽ được xóa bỏ sau khi hoàn thành việc sao chép chuyển thể sang dạng văn bản. Anh/chị cũng sẽ được cung cấp một bản sao của bản báo cáo cuối cùng. Buổi phỏng vấn sẽ được diễn ra tại trường hoặc bất cứ nơi nào thuận lợi cho Anh/chị. Buổi phỏng vấn sẽ diễn ra trong vòng 30-40 phút.

Một phiên bản tiếng Việt của các câu hỏi phỏng vấn sẽ được cung cấp cho Anh/chị để bảo đảm rằng Anh/chị có thể hiểu một cách rõ ràng nội dung của công cụ nghiên cứu này. Các câu trả lời của Anh/chị sẽ được dịch sang tiếng Anh để phục vụ cho nghiên cứu này.

Có phải tôi bắt buộc phải tham gia vào nghiên cứu này?

Việc tham gia vào nghiên cứu này là hoàn toàn tự nguyện vì thế Anh/chị có thể quyết định là có muốn tham gia hay không. Nếu Anh/chị đồng ý tham gia vào nghiên cứu này, Anh/chị sẽ giữ tờ thông tin này và được yêu cầu ký vào thư chấp thuận tham gia.

Quyền của tôi khi tham gia vào nghiên cứu này là gì?

Anh/chị có quyền từ chối tham gia hoặc từ bỏ tham gia vào nghiên cứu này bất cứ lúc nào và không gặp bất kỳ một bất lợi nào. Nếu Anh/chị quyết định từ bỏ việc tham gia vào

nghiên cứu này, Anh/chị sẽ có hai lựa chọn: a) rời bỏ nghiên cứu này mà không hủy bỏ những đóng góp của Anh/chị đến thời điểm đó hoặc b) rời bỏ nghiên cứu này và hủy bỏ tất cả những đóng góp của Anh/chị đến thời điểm đó. Anh/chị cũng có quyền truy cập vào thông tin đã thu thập được như là một phần của nghiên cứu này. Anh/chị sẽ được thông báo các thông tin mới về những ảnh hưởng có lợi hoặc bất lợi liên quan đến nghiên cứu này mà có thể ảnh hưởng đến Anh/chị.

Những rủi ro và bất lợi khi tham gia vào nghiên cứu này là gì?

Nghiên cứu này không gây ra bất cứ rủi ro nào cho Anh/chị.

Những lợi ích khi tham gia vào nghiên cứu này là gì?

Không có những lợi ích trực tiếp từ việc tham gia vào nghiên cứu này. Tuy nhiên, sản phẩm của nghiên cứu này có thể rất hữu ích cho đơn vị của Anh/chị bởi vì kết quả và thảo luận của nghiên cứu này sẽ cho phép các trường THPT xác định được những cách tiếp cận hiệu quả đối với việc giảng dạy và học tập kiến thức thông tin để nâng cao hoạt động học tập của học sinh. Đồng thời, những đề xuất của nghiên cứu này có thể rất hữu ích cho việc thiết kế một chương trình giảng dạy kiến thức thông tin tại các trường THPT.

Việc tham gia của tôi vào nghiên cứu này sẽ được giữ bí mật?

Thông tin cá nhân của Anh/chị sẽ được giữ bí mật, vì thế Anh/chị không thể bị nhận biết từ những gì mà Anh/chị nói.

Chuyện gì sẽ xảy ra với kết quả của nghiên cứu này?

Trong suốt quá trình nghiên cứu, thông tin thu thập được từ Anh/chị sẽ được chuyển đổi sang hình thức số hóa và lưu giữ trong những thư mục và đĩa cứng có mật khẩu. Dữ liệu sẽ được lưu giữ an toàn và sao chép dự phòng trong một ổ đĩa cứng bên ngoài. Nó sẽ được giữ cho đến khi nghiên cứu này kết thúc và kết quả được công bố. Sau cùng, dữ liệu sẽ được gửi về và lưu giữ an toàn và bảo mật tại trường ĐH Northumbria, Newcastle.

Dữ liệu thu thập từ Anh/chị sẽ được dịch sang tiếng Anh và được đưa vào luận án tiến sĩ của tôi và những ấn phẩm khác như là các bài báo, chương sách dưới tên tôi, và nó cũng sẽ được chỉnh sửa và sử dụng trong các bài thuyết trình tại các hội thảo.

Tôi phải làm gì nếu có điều gì sai phạm xảy ra?

Nếu có điều gì sai phạm xảy ra trong suốt quá trình của buổi phỏng vấn, Anh/chị có thể gửi những khiếu nại của mình đến người hướng dẫn của tôi – TS. Geoff Walton tại địa chỉ geoff.walton@northumbria.ac.uk.

Ai tài trợ cho nghiên cứu này?

Nghiên cứu này được tài trợ một phần bởi Bộ Giáo dục và Đào tạo Việt Nam. Nghiên cứu này là một phần trong chương trình đào tạo tiến sĩ ngành Thông tin học tại trường ĐH Northumbria, Newcastle, Anh quốc và được lên kế hoạch là hoàn thành trong 3 năm từ tháng 2/2014 đến 2/2017.

Ai sẽ xem xét những vấn đề liên quan đến đạo đức nghiên cứu của đề tài này?

Nghiên cứu này tuân theo những hướng dẫn và thủ tục về đạo đức nghiên cứu khoa học của trường ĐH Northumbria. Vấn đề về đạo đức nghiên cứu của đề tài này được xem xét bởi Hội đồng đạo đức nghiên cứu khoa học của Khoa Công nghệ và Môi trường, là một bộ phận thuộc Hội đồng đạo đức nghiên cứu khoa học của trường ĐH Northumbria.

Thông tin liên lạc

Nếu Anh/chị có bất kỳ câu hỏi hay vấn đề quan ngại nào, vui lòng liên lạc với tôi tại địa chỉ sau:

- Ngô Thị Huyền (Chủ đề tài): huyen.ngo@northumbria.ac.uk hoặc ngohuyen87@gmail.com
- TS. Geoff Walton (Giáo viên hướng dẫn chính): geoff.walton@northumbria.ac.uk

Nếu Anh/chị quyết định tham gia đề tài này, Anh/chị sẽ được cung cấp 1 tờ thông tin này và được yêu cầu ký vào thư chấp thuận tham gia đề tài.

Chân thành cảm ơn Anh/chị.

Examining the practice of information literacy teaching and learning in upper secondary schools in Vietnam

Information sheet for you!

Hello!

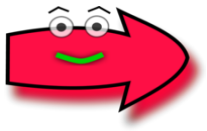
My name is Ngo Thi Huyen, who is a:

- Lecturer of the University of Social Sciences and Humanities Ho Chi Minh City, Vietnam, and
- Postgraduate research student at Northumbria University, Newcastle, United Kingdom

I am looking at the practice of information literacy teaching and learning in Vietnam's upper secondary schools. Please take time to read this information sheet and contact me if you have any questions, or would like to participate in the research. Thank you for reading this.

What is the study about?

The research aims to investigate the practice of information literacy teaching and learning in Vietnam's upper secondary schools.



Why have I been chosen?

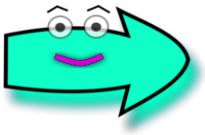
You are very important and with your help I can learn more about the practice of information literacy teaching and learning in Vietnam's upper secondary schools.

What will participation involve?

- You will be invited to fill in a questionnaire and may be asked to take part in a follow-up interview.
- If you are invited to take part in a follow-up interview, your responses will be tape recorded and made notes as well, and then transcribed into text form. Recordings of interviews will be deleted upon transcription. You would be very welcome to a copy of the final report. Don't worry, a Vietnamese version of the questionnaire and interview questions will be provided to you.

Do I have to take part?

Taking part in this research is totally voluntary.



What rights do I have?

- You are free to decline to participate, or to withdraw from the research at any time without saying why.
- You have the right to access information collected as part of the study.
- You will be told of any new information about

What are the possible risks of taking part?

This research poses no risk to you. No personally sensitive data will be collected and stored.

What are the benefits of taking part?

There is no direct benefit for taking part in this research. However, the outcome of this research may be useful to your school when designing an information

Will my personal details be kept confidential?

Your personal details will be kept strictly confidential so that you cannot be identified from what you said.

.

What would happen to the results of the research?

- Information will be transformed into digital form and stored in password protected drives and folders.
- Data will be stored securely and backed up on an external hard drive.
- The data would be safely and securely disposed of or deposited with Northumbria University, Newcastle, United Kingdom.
- The data will be translated into English and included in the content of the researcher's PhD thesis and other publications.

What if something goes wrong?

Please email your complaints to the researcher's supervisor - Dr. Geoff Walton at geoff.walton@northumbria.ac.uk

Who is funding the research?

This research is funded by the Ministry of Education and Training, Vietnam and is a part of the PhD programme in Information Science at Northumbria University, Newcastle, United Kingdom.

Who has ethically reviewed the research?

This research adheres to Northumbria University's ethical guidelines and procedures. This research has been reviewed for ethical issues by the Research Ethics Committee of the Faculty of Engineering and Environment, as part of the University Research Ethics Committee (UREC) in Northumbria University.

How can I contact you?

Please contact me at:

- Huyen Thi Ngo (Researcher): huyen.ngo@northumbria.ac.uk or ngohuyen87@gmail.com
- Dr. Geoff Walton (Principal Supervisor): geoff.walton@northumbria.ac.uk

If you decide to take part, you will be given this information sheet to keep and be asked to sign a consent form.

Nghiên cứu thực tiễn giảng dạy và học tập kiến thức thông tin ở các trường Trung học Phổ thông tại Việt Nam

Thông tin dành cho bạn!

Xin chào!

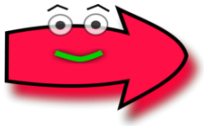
Tên tôi là Ngô Thị Huyền, hiện nay là:

- Giảng viên của Trường ĐH Khoa học Xã hội và Nhân văn Tp. Hồ Chí Minh, Việt Nam, và là
- Nghiên cứu sinh tại trường ĐH Northumbria, Newcastle, Anh quốc.

Tôi đang nghiên cứu về thực tiễn của việc giảng dạy và học tập kiến thức thông tin tại các trường Trung học Phổ thông tại Việt Nam. Vui lòng xem những thông tin dưới đây và liên lạc với tôi nếu bạn có bất kỳ câu hỏi

Nghiên cứu này là gì?

Đề tài này nghiên cứu thực tiễn việc giảng dạy và học tập kiến thức thông tin ở các trường Trung học Phổ thông tại Việt Nam.



Tại sao lại lựa chọn tôi?

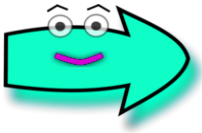
Bạn là người rất quan trọng và với sự giúp đỡ của bạn, tôi có thể tìm hiểu thêm về thực tiễn của việc giảng dạy và học tập kiến thức thông tin tại các trường THPT tại Việt Nam

Tôi phải làm gì?

- Bạn sẽ được mời điền vào một phiếu khảo sát và có thể được mời tham gia vào một buổi phỏng vấn.
- Nếu bạn được mời phỏng vấn, câu trả lời của bạn sẽ được thu âm và ghi chú lại, sau đó sẽ được sao chép chuyển thể sang dạng văn bản. Bản thu âm của buổi phỏng vấn sẽ được xóa bỏ sau khi hoàn thành việc sao chép chuyển thể sang dạng văn bản. Bạn cũng sẽ được cung cấp một bản sao của bản báo cáo cuối cùng. Đừng lo lắng, bạn sẽ được cung cấp một bản khảo sát bằng tiếng Việt và các câu hỏi phỏng vấn bằng tiếng Việt.

Tôi bắt buộc phải tham gia sao?

Việc tham gia là hoàn toàn tự nguyện.



Tôi có quyền gì?

- Bạn được quyền từ chối hoặc từ bỏ tham gia bất cứ lúc nào mà không cần đưa ra lý do.
- Bạn được quyền truy cập vào thông tin đã thu thập được như là một phần của nghiên cứu này.
- Bạn sẽ được thông báo những thông tin mới về những ảnh hưởng có lợi hoặc bất lợi liên quan đến nghiên cứu

Nếu tôi tham gia thì có bất lợi gì không?

Nghiên cứu này không gây bất kỳ bất lợi gì cho bạn cả. Những dữ liệu cá nhân nhạy cảm sẽ không bị thu thập và lưu giữ

Nếu tôi tham gia thì có lợi ích gì không?

Không có lợi ích trực tiếp từ việc tham gia nghiên cứu này. Tuy nhiên, sản phẩm của nghiên cứu này có thể hữu ích cho trường của bạn trong việc thiết kế một chương trình giảng dạy kiến thức thông tin.

Thông tin cá nhân của tôi sẽ được giữ bí mật chứ?

Thông tin cá nhân của bạn sẽ được giữ bí mật, do đó bạn sẽ không bị nhận diện bởi những gì mà bạn nói.

.

Chuyện gì sẽ xảy ra với kết quả của nghiên cứu này?

- Thông tin thu thập được từ bạn sẽ được chuyển đổi sang hình thức số hóa và lưu giữ trong những thư mục và đĩa cứng có mật khẩu.
- Dữ liệu sẽ được lưu giữ an toàn và sao chép dự phòng trong một ổ đĩa cứng bên ngoài.
- Dữ liệu sẽ được gửi về và lưu giữ an toàn và bảo mật tại trường ĐH Northumbria, Newcastle.
- Dữ liệu thu thập từ bạn sẽ được dịch sang tiếng Anh và được đưa vào luận án tiến sĩ của tôi và những ấn phẩm khác.

Tôi phải làm gì nếu có sai phạm xảy ra?

Bạn vui lòng gửi những khiếu nại của mình đến người hướng dẫn của tôi - TS. Geoff Walton tại địa chỉ geoff.walton@northumbria.ac.uk.

Ai tài trợ cho nghiên cứu này?

Nghiên cứu này được tài trợ một phần bởi Bộ Giáo dục và Đào tạo Việt Nam. Nghiên cứu này là một phần trong chương trình đào tạo tiến sĩ ngành Thông tin học tại trường ĐH Northumbria, Newcastle, Anh quốc.

Ai sẽ xem xét những vấn đề liên quan đến đạo đức nghiên cứu của đề tài này?

Nghiên cứu này tuân theo những hướng dẫn và thủ tục về đạo đức nghiên cứu khoa học của trường ĐH Northumbria. Vấn đề về đạo đức nghiên cứu của đề tài này được xem xét bởi Hội đồng đạo đức nghiên cứu khoa học của Khoa Công nghệ và Môi trường, là một bộ phận thuộc Hội đồng đạo đức nghiên cứu khoa học của trường ĐH Northumbria.

Tôi liên lạc với bạn bằng cách nào?

Vui lòng liên lạc với tôi tại địa chỉ:

- Ngô Thị Huyền (Chủ đề tài): huyen.ngo@northumbria.ac.uk hoặc ngohuyen87@gmail.com
- TS. Geoff Walton (Giáo viên hướng dẫn chính): geoff.walton@northumbria.ac.uk

Nếu bạn quyết định tham gia đề tài này, bạn sẽ được cung cấp 1 tờ thông tin này và được yêu cầu ký vào thư chấp thuận tham gia đề tài.

Chân thành cảm ơn!

Appendix 6. Consent form

Consent form

Research Topic: Examining the practice of information literacy teaching and learning in upper secondary schools in Vietnam
Researcher: Huyen Thi Ngo

- Lecturer – University of Social Sciences and Humanities Ho Chi Minh City, Vietnam
- Postgraduate research student – Northumbria University, Newcastle, United Kingdom

Please tick to indicate you consent to the following:

I have read and I understand the purpose of the study and my participation, as provided in the information sheet dated _____	☐
I have been given sufficient time to consider whether or not to participate in this study.	☐
I was given the opportunity to ask questions about the study and my participation, and they were answered satisfactorily.	☐
I understand that taking part in this study is voluntary and that I can withdraw from the study at any time without giving reasons.	☐
If I decide to withdraw from the study, I know that I have been given the option to (Please tick as appropriate): - Leave the research without moving my contribution to date - Leave the research and withdraw all my contribution to date	 ☐ ☐
I was informed of my rights in the study.	☐
I understand that the data I provide will be anonymous, and my name and details will be kept confidential.	☐
I understand that no personally sensitive data will be collected and stored.	☐
I know who to contact if I have any questions about the study.	☐
I wish to receive a summary of the results from the study.	☐
I voluntarily agree to participate in the study.	☐

Participant's name: _____

Signature: _____ Date: _____

Researcher's name: _____

Signature: _____ Date: _____

**Note: This form adheres to Northumbria University's ethical guidelines*

THƯ ĐỒNG Ý THAM GIA NGHIÊN CỨU

Đề tài: Nghiên cứu thực tiễn giảng dạy và học tập kiến thức thông tin ở các trường Trung học Phổ thông tại Việt Nam.

Chủ đề tài: Ngô Thị Huyền

- Giảng viên – Trường ĐH Khoa học Xã hội và Nhân văn Tp. Hồ Chí Minh.
- Nghiên cứu sinh – Trường ĐH Northumbria, Newcastle, Anh quốc.

Vui lòng đánh dấu (X) vào những ô sau đây để thể hiện là anh/chị đồng ý trước khi tham gia vào nghiên cứu này.

Tôi đã đọc và hiểu được mục đích của nghiên cứu này cũng như vai trò tham gia nghiên cứu của mình như đã được cung cấp trong tờ thông tin vào ngày	☐
Tôi đã được cung cấp đủ thời gian để xem xét liệu có nên tham gia vào nghiên cứu này hay không.	☐
Tôi đã được cung cấp các cơ hội để đưa ra những câu hỏi về dự án cũng như vai trò tham gia nghiên cứu của mình, và tôi hài lòng với các câu trả lời đó.	☐
Tôi hiểu rằng việc tham gia vào nghiên cứu này là tự nguyện và do đó tôi có thể rút khỏi nghiên cứu này bất cứ lúc nào mà không cần đưa ra lý do.	☐
Nếu như tôi quyết định rút khỏi nghiên cứu này, tôi biết rằng tôi có hai sự lựa chọn. (vui lòng đánh dấu vào ô thích hợp) - Rời khỏi nghiên cứu này nhưng không hủy bỏ những đóng góp của tôi cho đến thời điểm đó. - Rời khỏi nghiên cứu này và hủy bỏ tất cả những đóng góp của tôi cho đến thời điểm đó.	 ☐ ☐
Tôi đã được thông báo về những quyền lợi của tôi khi tham gia vào nghiên cứu này.	☐
Tôi hiểu rằng dữ liệu mà tôi cung cấp sẽ được thể hiện ở tình trạng giấu tên, đồng thời tên và thông tin chi tiết về tôi sẽ được giữ bí mật.	☐
Tôi hiểu rằng không có bất kỳ thông tin nhạy cảm cá nhân nào được thu thập và lưu giữ.	☐
Tôi biết người để liên lạc khi tôi có bất kỳ câu hỏi nào liên quan đến nghiên cứu này.	☐
Tôi mong muốn nhận được một bản tóm tắt về kết quả của nghiên cứu này.	☐
Tôi đồng ý tham gia vào nghiên cứu này.	☐

Tên của người tham gia:

Chữ ký: Ngày:

Tên của chủ đề tài: Ngô Thị Huyền

Chữ ký:  Ngày: 12/12/2014

**Ghi chú: Mẫu thư này tuân theo các hướng dẫn về đạo đức nghiên cứu của trường ĐH Northumbria.*

Application form

Research Topic: Examining the practice of information literacy teaching and learning in upper secondary schools in Vietnam

Researcher: Huyen Thi Ngo

- Lecturer – University of Social Sciences and Humanities Ho Chi Minh City, Vietnam
- Postgraduate research student – Northumbria University, Newcastle, United Kingdom

Please tick to indicate you consent to the following:

- ☐ I have read and I understand the purpose of the study and my participation, as provided in the information sheet dated _____
- ☐ I have been given sufficient time to consider whether or not to participate in this study.
- ☐ I was given the opportunity to ask questions about the study and my participation, and they were answered satisfactorily.

- ☐ I understand that taking part in this study is voluntary and that I can withdraw from the study at any time without giving reasons.
- ☐ If I decide to withdraw from the study, I know that I have been given the option to (Please tick as appropriate):
  - Leave the research without moving my contribution to date ☐
  - Leave the research and withdraw all my contribution to date ☐
- ☐ I was informed of my rights in the study.

- ☐ I understand that the data I provide will be anonymous, and my name and details will be kept confidential.
- ☐ I understand that no personally sensitive data will be collected and stored.
- ☐ I know who to contact if I have any questions about the study.

- I wish to receive a summary of the results from the study.
- I voluntarily agree to participate in the study.

Please feel free to contact me with any questions:

Huyen Thi Ngo (Researcher): huyen.ngo@northumbria.ac.uk or ngohuyen87@gmail.com

If you feel this study has harmed you in any way you can contact my supervisor:

Dr. Geoff Walton (Principal Supervisor): geoff.walton@northumbria.ac.uk

Students who are willing to participate in this research must fill in the form below and give it to me in the library before …...
Thank you

Student's name: _____

School: _____

Level: _____

Signature: _____ Date: _____

Parent/ legal guardian, please print your name and sign below.
I give permission for my child to take part in this research.
Name (BLOCK CAPITALS):

_____

Signature:

_____

Address:

**Note: This form adheres to Northumbria University's ethical guidelines*

THƯ ĐỒNG Ý THAM GIA NGHIÊN CỨU

Đề tài: Nghiên cứu thực tiễn giảng dạy và học tập kiến thức thông tin ở các trường Trung học Phổ thông tại Việt Nam.

Chủ đề tài: Ngô Thị Huyền

- Giảng viên – Trường ĐH Khoa học Xã hội và Nhân văn Tp. Hồ Chí Minh.
- Nghiên cứu sinh – Trường ĐH Northumbria, Newcastle, Anh quốc.

Vui lòng đánh dấu (X) vào những ô sau để thể hiện là bạn đồng ý trước khi tham gia vào nghiên cứu này.

[ ] • Tôi đã đọc và hiểu được mục đích của nghiên cứu này cũng như vai trò tham gia nghiên cứu của mình như đã được cung cấp trong tờ thông tin vào ngày.....

[ ] • Tôi đã được cung cấp đủ thời gian để xem xét liệu có nên tham gia vào nghiên cứu này hay không.

[ ] • Tôi đã được cung cấp các cơ hội để đưa ra những câu hỏi về dự án cũng như vai trò tham gia nghiên cứu của mình, và tôi hài lòng với các câu trả lời đó.

[ ] • Tôi hiểu rằng việc tham gia vào nghiên cứu này là tự nguyện và do đó tôi có thể rút khỏi nghiên cứu này bất cứ lúc nào mà không cần đưa ra lý do.

[ ] • Nếu như tôi quyết định rút khỏi nghiên cứu này, tôi biết rằng tôi có hai sự lựa chọn (vui lòng đánh dấu vào ô thích hợp):
  - Rời khỏi nghiên cứu này nhưng không hủy bỏ những đóng góp của tôi cho đến thời điểm đó [ ]
  - Rời khỏi nghiên cứu này và hủy bỏ tất cả những đóng góp của tôi cho đến thời điểm đó [ ]

[ ] • Tôi đã được thông báo về những quyền lợi của tôi khi tham gia vào nghiên cứu này.

[ ] • Tôi hiểu rằng dữ liệu mà tôi cung cấp sẽ được thể hiện ở tình trạng giấu tên, đồng thời tên và thông tin chi tiết về tôi sẽ được giữ bí mật.

[ ] • Tôi hiểu rằng không có bất kỳ thông tin nhạy cảm cá nhân nào được thu thập và lưu giữ.

[ ] • Tôi biết người để liên lạc khi tôi có bất kỳ câu hỏi nào liên quan đến nghiên cứu này.

[ ] • Tôi mong muốn nhận được một bản tóm tắt về kết quả của nghiên cứu này.

[ ] • Tôi đồng ý tham gia vào nghiên cứu này.

Vui lòng liên lạc với tôi nếu bạn có bất kỳ câu hỏi nào:

Ngô Thị Huyền (Chủ đề tài): huyen.ngo@northumbria.ac.uk hoặc ngohuyen87@gmail.com

Nếu bạn cảm thấy nghiên cứu này gây tổn hại đến bạn, bạn có thể liên lạc với người hướng dẫn của tôi:

Tiến sĩ. Geoff Walton (Người hướng dẫn chính): geoff.walton@northumbria.ac.uk

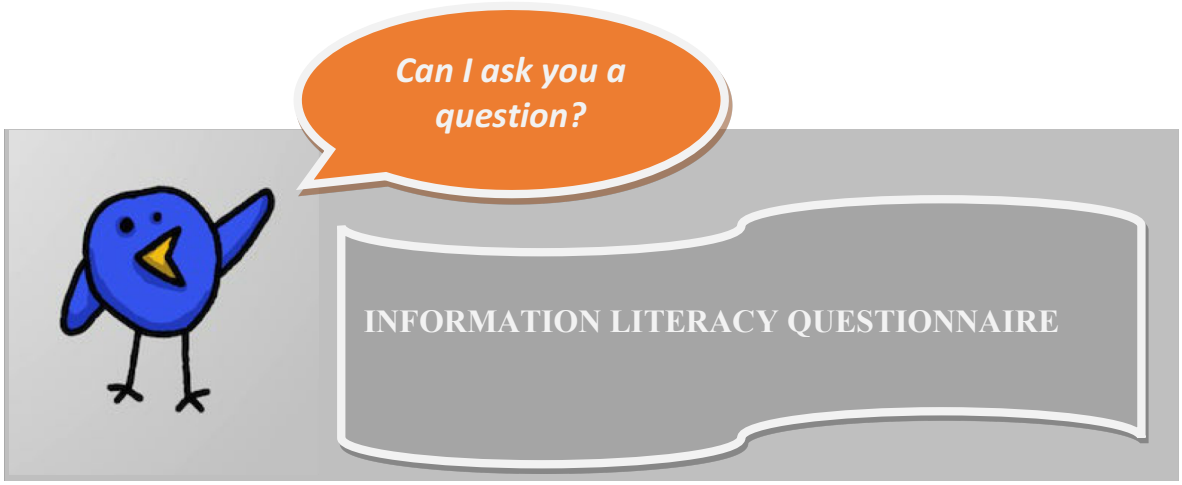
Nếu bạn đồng ý tham gia vào nghiên cứu này, vui lòng điền vào thư và gửi lại cho tôi trước ngày……...
Chân thành cảm ơn

Tên của học sinh:
Trường:
Cấp học:
Chữ ký: Ngày:

Cha mẹ/ người bảo hộ, vui lòng cung cấp tên và chữ ký bên dưới.
Tôi đồng ý cho con tôi tham gia vào nghiên cứu này.
Tên (ghi bằng chữ in hoa):
Chữ ký:
Địa chỉ

**Ghi chú: Mẫu thư này tuân theo các hướng dẫn về đạo đức nghiên cứu của trường ĐH Northumbria.*

Appendix 7. Pilot questionnaire – English version



Thank you for taking the time to complete this questionnaire which aims to explore your information literacy level. It is not a test, so do not mind that your answer is right or wrong. Information literacy is explained more fully in the questionnaire. I would like to emphasise that your responses are extremely valuable to the study, and it is important that you answer all the questions as honestly and fully as you can. Please do not discuss the answers of these questions with your friends and teachers until after you have completed the questionnaire.

We estimate that this will take you about…minutes to complete. Please return the questionnaire to…

Please tick (X) on appropriate box (tick one only)

A: ABOUT YOU

1 Name:……

2 Name of the school you are studying: ……

3 What is your gender? ☐ Male ☐ Female

What is your age?

□ 15 □ 16 □ 17 □ 18

Level of study

□ Grade 10 □ Grade 11 □ Grade 12

B: AWARENESS AND SELF-RATING

Have you heard or read about the term "information literacy"?

□ Yes □ No

Information literacy is defined as "the ability to identify what information is needed, understand how the information is organized, identify the best sources of information for a given need, locate those sources, evaluate the sources critically, and share that information. It is the knowledge commonly used research techniques" (AASL). Information is simply what is conveyed as words, sound, etc. For example, the message you get from your teacher is information.

Using the above definition, how would you rate yourself in terms of being or not being information literate? (Choose 5 for highest rating and 1 for lowest rating)

1	2	3	4	5

How would you rate your ability to develop search strategies in order to find appropriate information?

Very good	Good	Neither good nor poor	Poor	Very poor

How would you rate your ability to evaluate information sources?

Very good	Good	Neither good nor poor	Poor	Very poor

How would you rate your ability to use information ethically? There are copyright and intellectual property issues, for example, if you plan to use the information in an article, you cannot copy it without references to the information sources. For example, you cannot post a photo which belongs to another person on your own website if you do not seek permission from that person.

Very good	Good	Neither good nor poor	Poor	Very poor

How would you rate your ability to use English to engage with information effectively?

Very good	Good	Neither good nor poor	Poor	Very poor

C: YOUR INFORMATION LITERACY

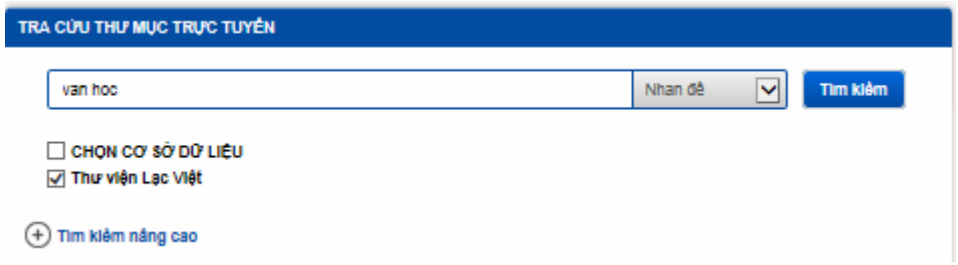
12

Most libraries use call numbers to arrange their books. Call number shows you the exact location of the book and often appears on the spine of books. How do you describe books which have the same or similar call numbers?

- ☐ They were written by the same author.
- ☐ They were bought at the same time.
- ☐ They have the same or similar subjects.
- ☐ They have the same size.
- ☐ I do not know

13

If you want to search for the book "Van hoc" by using your online library catalogue (see picture), which search type would you choose? (For supervisors and examiners, not in the questionnaire, "Van hoc" means Literature)



- ☐ Tat ca (All fields)
- ☐ Tac gia (Author)
- ☐ Nhan de (Title)
- ☐ Linh vuc (Subject)
- ☐ I do not know

14

You found a book which is a biography of Ho Chi Minh. You need to find the chapter that deals with his work in the period 1940-1945. Which of the following do you use to locate the chapter on this period?

- Summary in the library catalogue
- Table of contents
- Index
- All of the above
- I do not know

You are reading a geography book and you want to find the passages on "Ha Noi". Which of the following parts of the book would you use to locate the passages?

- Bibliography
- Index
- Preface
- Title page
- I do not know

When you search your school database for documents using "Van hoc", you retrieve many documents. You want to narrow your search. Which of the following searches do you use?

- Van hoc and Viet Nam
- Van hoc or Van chuong (for supervisors and examiners, not in the questionnaire, "Van hoc" or "Van chuong" means Literature)
- I do not know

When you search your school database for documents using "Tre em", you retrieve some documents. You want to retrieve more documents. Which of the following searches do you use? (for supervisors and examiners, not in the questionnaire, "Tre em", "Thieu nhi" and "Tre con" mean children)

- Tre em or Thieu nhi or Tre con
- Tre em and Thieu nhi and Tre con
- Tre em not Thieu nhi

- I do not know

When you want to find all the books written by Nguyen Tuan, which search type would you choose?

- Subject
- Title
- Author
- Keyword
- I do not know

Which of the following is **NOT** a search engine operator (also known as a Boolean operator)?

- And
- Or
- Not
- Same
- I do not know

You want to find documents for your essay, but you are aware that the topic has several synonyms (synonyms are words that mean the same or nearly the same as each other, for example, old people, old folks, elderly and senior citizens), which search operator would you use?

- And
- Or
- Not
- Near
- I do not know

Truncation searching is used to find all terms by using a portion of a word. If you end a search term with a special symbol, such as Libr*, which of the following results would you retrieve?

- Library and librarian
- Library and Literature
- Interlibrary and library
- I do not now

You have a plan to study abroad. You are searching for information about a country, the United Kingdom. Given the sources below, select the best place to begin your search.

- Library subscription electronic journal database
- Print encyclopaedia
- Internet search engine, such as Google
- Library online catalogue
- I do not know

You are preparing a PowerPoint presentation on how to learn English. You hear that the Ministry of Education and Training has issued a new regulation to change English textbooks. You want to use this information in your presentation. What should you do to verify that this information is correct?

- Ask your friends
- Ask your parents or guardian
- Call bookstore owner where you often buy books
- Ask at the library
- I do not know

Read the two paragraphs below. Select the statement on which both paragraphs agree.

Paragraph 1:

Theo số liệu thống kê của WHO (Tổ chức y tế thế giới): Trung bình mỗi năm, thế giới có trên 10 triệu người chết vì tai nạn giao thông. Năm 2006, riêng Trung Quốc có tới 89,455 người chết vì các vụ tai nạn giao thông. Ở Việt Nam con số này là 12,300. Năm 2007, WHO đặt Việt Nam vào quốc gia có tỉ lệ các vụ tử vong vì tai nạn giao thông cao nhất thế giới với 33 trường hợp tử vong mỗi ngày.[49]

(Translate the above paragraph for supervisors and examiners, not in the questionnaire, "According to WHO (World Health Organization), there are more than 10 million people killed in traffic-related accidents around the world every year. In 2006, China had 89,455 deaths from traffic accidents. In Vietnam, the figure was 12,300. In 2007, WHO assessed Vietnam as a country which had the highest traffic-related death rate around the world, with 33 deaths per day")

Paragraph 2:

Hàng năm số vụ tai nạn giao thông vẫn không hề suy giảm, ngược lại nó còn tăng lên rất nhiều. Cứ mỗi năm, Việt Nam có tới gần một nghìn vụ tai nạn giao thông, nhiều nhất là xe máy. Nguyên nhân chính gây ra các vụ tai nạn phần lớn là do ý thức chấp hành luật lệ giao thông của người dân: uống rượu bia vượt quá nồng độ cho phép khi lái xe, không đội mũ bảo hiểm, chở trên ba người phóng nhanh vượt ẩu…[50]

(Translate the above paragraph for supervisors and examiners, not in the questionnaire, "The annual number of traffic accidents remains undiminished, it rapidly increased instead. Every year, Vietnam has around one thousand traffic accidents. Most of them are motorcycle accidents. This results from a lack of awareness of traffic safety laws, such as drinking alcohol while driving, not wearing a helmet, etc.")

- ☐ Vietnam has high traffic-related death rate

[49] Reference: Quy Nhon School 2014. How to write an essay – traffic safety [Online]. Available: http://quynhon.edu.vn/index.php/hoc-tap/phuong-phap-hoc-tap/301-cach-lam-bai-vn-ngh-lun-xa-hi-an-toan-giao-thong.pdf.

[50] Reference: Hoang Quoc Viet School 2014. Traffic safety [Online]. Available: http://thpthoangquocviet.bacninh.edu.vn/ban-an-toan-giao-thong/tuyen-truyen-pho-bien-luat-an-toan-giao-thong-c9030-4549.aspx.

- Traffic accidents occur in young people.
- Vietnam is trying to reduce the number of traffic accidents
- I do not know

What is plagiarism?

- Citing someone else's work and providing a reference in your bibliography.
- Using someone else's work as it is your own.
- Discussing a book with your classmate.
- I do not know

You find an important article about the population growth rate in Vietnam for your group presentation in your geography class. Under the copyright law of Vietnam, you are allowed to make a copy of the article for your own personal use and:

- Make 3 copies for other members in your team.
- Make 10 copies to sell to your classmates.
- Make 100 copies and share on campus for an exhibition of the World Population Day.
- I do not know

You would like to use some photos from a collection "Sai Gon in pictures" for your web page. What should you do in order to not break copyright laws?

- Copy and post the photos on your web page
- Ask for permission from copyright owner to use the collection
- Edit the collection by cutting or adding some photos and then post on your web page.
- Use and give credit to the collection.
- I do not know

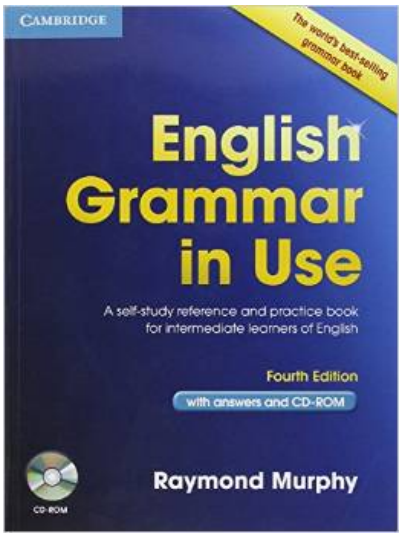
28

You have to submit your assignment tomorrow but you have not done anything. What should you do?

- Try to finish it before deadline even if the quality of your work is not as good as expected.
- Email or call your teacher and ask for an extension on the due date, even though it will mean a lower grade.
- Borrow your older sister's paper which she used last semester in the same class, add some of your notes and turn the paper in on time.
- I do not know

29

The following image is from the first page of a book. Could you show the book's title?



- English grammar in use
- English grammar in use: a self-study reference and practice book for intermediate learners of English
- Raymond Murphy
- Fourth edition
- The world's best-selling grammar book: English grammar in use
- I do not know

You search a book by using an English database. You find a citation, as follow:

HAHN, D., FLYNN, L. & REUBEN, S. 2008. The Ultimate Teen Book Guide, London, Walker.

What does "Walker" refer to in the above citation?

- Volume number
- Issue number
- Publisher
- Title
- I do not know

You love J. K. Rowling's Harry Potter novels. You want to find books written in English that J. K. Rowling wrote by using an English search engine, which search type would you use?

- Title search on: Rowling
- Author search on: Rowling
- Subject search on: Rowling
- I do not know

Often the article title will alert the researcher to bias. You are searching for articles and books related to the development of children's literature. You find a book with title "**Written for children: an outline of English-language children's literature".** Do you think this book is suitable for you?

- Yes, the book is suitable
- No, the book is unsuitable
- I do not know

Compare the following two paragraphs, and then identify which paragraph discusses the topic “Kings of Vietnam”

Paragraph 1: “The Hung dynasty produced 18 kings, each of whom ruled for 150 years. At this time, the nation was named **Van Lang.** This dynasty was then overthrown by a neighbouring king in 258 B.C. He established the new kingdom of **Au Lac** and built his capital at Phuc An, whose remains still exist today in the village of Co Loa, located west of Hanoi.”

Paragraph 2: "Unfortunately, life was rather chaotic for them wherever they lived. The repressive policies of South Vietnamese president **Ngo Dinh Diem** ultimately led to his assassination in 1963. Subsequent regimes didn't have any more popular support but were firmly entrenched, thanks to both the South Vietnamese and U.S. militaries.”[51]

- Paragraph 1
- Paragraph 2
- Both Paragraph 1 and 2
- Neither Paragraph 1 or 2
- I do not know

You are preparing a PowerPoint presentation that your teacher will post online. You have found some very effective photos from a website that has posted the following English message: "All of the images on this website are copyrighted. Please do not use any of them on a Web page, CD-ROM, printed or otherwise published work without receiving permission in advance from our site." What will you do?

- You have to seek permission from the copyright owner before you use the photos.

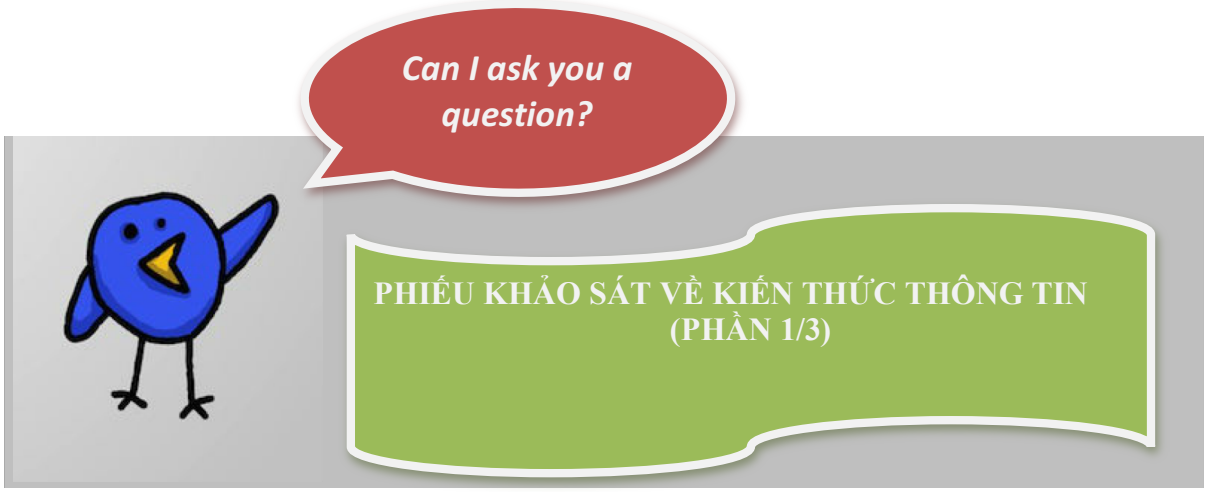
[51] Reference: Le, C. N. 2014. Vietnam history [Online]. Available at: http://www.asian-nation.org/vietnam-history.shtml.

- You have to ask for permission to use the photos in your PowerPoint presentation but can feel free to post the photos to your presentation knowing that you have applied for permission.
- You have to seek permission from the copyright owner and also provide a citation.
- You have to seek permission from the copyright owner, provide a citation in your PowerPoint, and give a reference in your bibliography.
- I do not know

Finally, please reflect on how you think you did on this assessment of your information literacy level and select the number that best represents your score (choose 5 for highest rating and 1 for lowest rating)

1	2	3	4	5

Appendix 8. Pilot questionnaire – Vietnamese version



Chân thành cảm ơn bạn vì đã bớt chút thời gian giúp tôi hoàn thành phiếu khảo sát này. Mục đích của bảng hỏi này là nghiên cứu trình độ kiến thức thông tin của học sinh Trung học Phổ thông. Đây không phải là bài kiểm tra, do đó đừng quan tâm câu trả lời của bạn đúng hay sai. Khái niệm Kiến thức thông tin sẽ được giải thích đầy đủ hơn trong phiếu khảo sát. Tôi muốn nhấn mạnh rằng câu trả lời của bạn rất có giá trị đối với nghiên cứu này và do đó điều quan trọng là bạn cần trả lời tất cả các câu hỏi trong phiếu khảo sát này một cách đầy đủ và chân thực nhất có thể. Bạn vui lòng đừng thảo luận câu trả lời của các câu hỏi này với bạn bè hoặc giáo viên của bạn cho đến khi bạn hoàn thành bảng hỏi. Phần hai của bảng hỏi này sẽ được gửi cho bạn vào ngày mai để hoàn thành.

Chúng tôi ước lượng là bạn sẽ mất khoảng 15 phút để hoàn thành phiếu khảo sát này. Vui lòng gửi lại phiếu khảo sát sau khi hoàn thành cho tôi.

Vui lòng đánh dấu (X) vào những ô trống thích hợp (bạn vui lòng chỉ đánh dấu vào **MỘT** ô trống thích hợp nhất với bạn)

A: THÔNG TIN VỀ BẠN

1 Họ tên:…….

2 Bạn đang theo học trường nào?.....

3

Giới tính của bạn là gì? [ ] Nam [ ] Nữ

4

Bạn bao nhiêu tuổi?

[ ] 15 [ ] 16 [ ] 17 [ ] 18

5

Bạn học lớp mấy?

[ ] Lớp 10 [ ] Lớp 11 [ ] Lớp 12

B: NHẬN THỨC VÀ TỰ ĐÁNH GIÁ

6

Bạn đã bao giờ đọc hoặc nghe nói về khái niệm "Kiến thức thông tin" chưa?

[ ] Có [ ] Không

7

Một định nghĩa về kiến thức thông tin là "Kiến thức thông tin là khả năng nhận biết được mình cần thông tin gì, hiểu được thông tin được tổ chức như thế nào, nhận biết được những nguồn thông tin tốt nhất phù hợp nhu cầu của mình, xác định được những nguồn thông tin đó, đánh giá những nguồn tin một cách thận trọng, và chia sẻ thông tin đó" (AASL). Trong đó, thông tin được hiểu một cách đơn giản là những gì được truyền đạt thông qua từ ngữ, âm thanh, v.v. Ví dụ, tin nhắn mà bạn nhận được từ giáo viên của bạn chính là thông tin.

Sử dụng định nghĩa trên, bạn tự đánh giá thế nào về bản thân mình, liệu bạn có phải là người có kiến thức thông tin không? (Chọn 5 cho mức cao nhất và 1 cho mức thấp nhất)

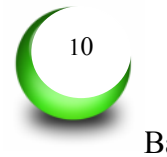
1	2	3	4	5
[ ]	[ ]	[ ]	[ ]	[ ]

Bạn tự đánh giá thế nào về khả năng của mình trong việc tìm kiếm thông tin phù hợp khi sử dụng những nguồn lực thông tin sau đây? (Chọn 5 cho mức cao nhất và 1 cho mức thấp nhất)

1	2	3	4	5
[ ]	[ ]	[ ]	[ ]	[ ]

Bạn tự đánh giá thế nào về khả năng của bạn trong việc đánh giá các nguồn thông tin?

Rất tốt	Tốt	Trung bình	Kém	Rất kém
[ ]	[ ]	[ ]	[ ]	[ ]



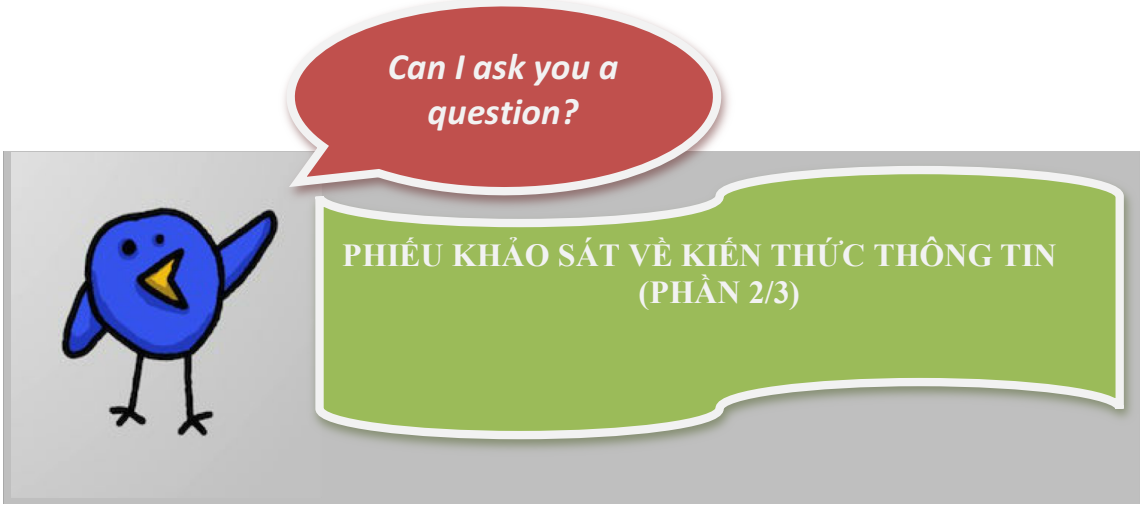
Bạn tự đánh giá như thế nào về khả năng của bạn trong việc sử dụng thông tin một cách có đạo đức? Sử dụng thông tin có đạo đức tức là chúng ta đề cập đến luật bản quyền và luật sở hữu trí tuệ, ví dụ, nếu bạn lên kế hoạch sử dụng thông tin trong một bài báo, bạn không thể chỉ đơn giản là sao chép nó mà không chỉ ra nguồn tham khảo. Ví dụ, bạn không thể tải một tấm hình mà nó thuộc về người khác lên trang web của bạn nếu bạn không hỏi ý kiến của người đó.

Rất tốt	Tốt	Trung bình	Kém	Rất kém
[ ]	[ ]	[ ]	[ ]	[ ]

11

Bạn tự đánh giá thế nào về khả năng của bạn trong việc sử dụng tiếng Anh để tương tác với thông tin?

Rất tốt	Tốt	Trung bình	Kém	Rất kém
☐	☐	☐	☐	☐



Chân thành cảm ơn bạn vì đã bớt chút thời gian giúp tôi hoàn thành phiếu khảo sát này. Mục đích của đề tài này là nghiên cứu trình độ kiến thức thông tin của học sinh Trung học Phổ thông. Đây không phải là bài kiểm tra, do đó đừng quan tâm câu trả lời của bạn đúng hay sai. Khái niệm Kiến thức thông tin sẽ được giải thích đầy đủ hơn trong phiếu khảo sát. Tôi muốn nhấn mạnh rằng câu trả lời của bạn rất có giá trị đối với nghiên cứu này và do đó điều quan trọng là bạn cần trả lời tất cả các câu hỏi trong phiếu khảo sát này một cách đầy đủ và chân thực nhất có thể. Bạn vui lòng đừng thảo luận câu trả lời của các câu hỏi này với bạn bè hoặc giáo viên của bạn cho đến khi bạn hoàn thành bảng hỏi. Phần ba của bảng hỏi này sẽ được gửi cho bạn vào ngày mai để hoàn thành.

Chúng tôi ước lượng là bạn sẽ mất khoảng 15 phút để hoàn thành phiếu khảo sát này. Vui lòng gửi lại phiếu khảo sát sau khi hoàn thành cho tôi.

Vui lòng đánh dấu (X) vào những ô trống thích hợp (bạn vui lòng chỉ đánh dấu vào **MỘT** ô trống thích hợp nhất với bạn)

A: THÔNG TIN VỀ BẠN

1

Họ tên:……..

C: KIẾN THỨC THÔNG TIN CỦA BẠN

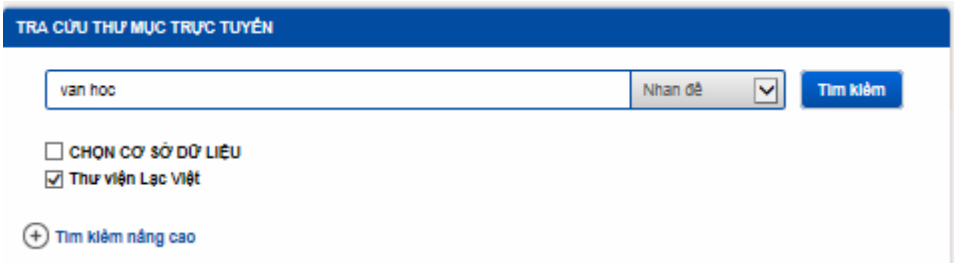
12

Hầu hết các thư viện đều sử dụng các số hiệu để sắp xếp sách trong thư viện. Số hiệu sách giúp bạn xác định được vị trí chính xác của quyển sách và thường xuất hiện trên gáy của quyển sách. Vậy bạn mô tả như thế nào về những quyển sách có số hiệu sách giống nhau hoặc tương tự nhau?

[ ] Chúng được viết bởi cùng một tác giả
[ ] Chúng được mua vào cùng một lúc
[ ] Chúng có chủ đề giống hoặc gần giống nhau
[ ] Chúng có cùng kích cỡ
[ ] Tôi không biết

13

Nếu bạn muốn tìm những quyển sách về lĩnh vực "Văn học" bằng cách sử dụng mục lục tra cứu trực tuyến của thư viện (xem hình), bạn sử dụng loại tìm kiếm nào sau đây?



[ ] Tất cả
[ ] Tác giả
[ ] Nhan đề
[ ] Chủ đề
[ ] Tôi không biết

14

Bạn tìm một quyển sách về tiểu sử của Chủ tịch Hồ Chí Minh. Bạn cần tìm chương sách nói về các tác phẩm của Bác trong giai đoạn 1940-1945. Bạn sử dụng công cụ nào sau đây để xác định chương sách đó?

[ ] Bản tóm tắt trong mục lục thư viện

[ ] Mục lục sách

[ ] Bảng chú giải

[ ] Tất cả

[ ] Tôi không biết

15

Bạn đang đọc một quyển sách Địa lý và bạn muốn tìm những đoạn văn viết về Hà Nội. Phần nào sau đây trong quyển sách mà bạn dùng để xác định vị trí của những đoạn văn đó?

[ ] Danh mục sách tham khảo

[ ] Bảng chú giải

[ ] Lời nói đầu

[ ] Trang nhan đề

[ ] Tôi không biết

16

Khi bạn tìm trong cơ sở dữ liệu trường của bạn cho những tài liệu về chủ đề "Văn học", bạn tìm được quá nhiều tài liệu. Bạn muốn thu hẹp kết quả tìm của mình để nhận được ít tài liệu hơn. Biểu thức tìm nào sau đây bạn sẽ sử dụng?

[ ] Văn học and Việt Nam

[ ] Văn học or Văn chương

[ ] Tôi không biết

17

Khi bạn tìm trong cơ sở dữ liệu trường của bạn về những tài liệu viết về trẻ em, bạn sử dụng thuật ngữ tìm "Trẻ em". Bạn muốn tìm được thêm nhiều tài liệu hơn. Biểu thức tìm nào sau đây bạn sẽ sử dụng?

[ ] Trẻ em or Thiếu nhi or Trẻ con

[ ] Trẻ em and Thiếu nhi and Trẻ con

[ ] Trẻ em not Thiếu nhi

[ ] Tôi không biết

Khi bạn muốn tìm tất cả những quyển sách được viết bởi nhà văn Nguyễn Tuân, loại tìm kiếm nào sau đây bạn sẽ sử dụng?

[ ] Chủ đề

[ ] Nhan đề

[ ] Tác giả

[ ] Từ khóa

[ ] Tôi không biết

Trong những lựa chọn sau, cái nào **KHÔNG PHẢI** là toán tử tìm kiếm (cũng được biết như là toán tử Boolean)

[ ] And

[ ] Or

[ ] Not

[ ] Same

[ ] Tôi không biết

Bạn muốn tìm tài liệu cho bài văn của mình, nhưng bạn biết rằng đề tài của bạn có nhiều từ đồng nghĩa (Từ đồng nghĩa là những từ có nghĩa giống hoặc gần giống nhau), (ví dụ: người già, người cao tuổi, cao niên), toán tử tìm kiếm nào bạn sẽ sử dụng?

[ ] And

[ ] Or

[ ] Not

[ ] Near

[ ] Tôi không biết

Tìm kiếm chặt cụt được sử dụng để tìm tất cả những thuật ngữ có liên quan bằng cách sử dụng một phần của một từ. Nếu bạn kết thúc một thuật ngữ tìm bằng một ký hiệu đặc biệt, như là Libr*, theo bạn bạn sẽ thu được những kết quả nào sau đây?

[ ] Library và librarian
[ ] Library và Literature
[ ] Interlibrary và library
[ ] Tôi không biết

Bạn lên kế hoạch đi du học. Bạn đang tìm kiếm thông tin về một đất nước đó là Anh quốc. Trong những nguồn thông tin sau đây, hãy chọn ra nơi tốt nhất để bắt đầu việc tìm kiếm của bạn.

[ ] Cơ sở dữ liệu tạp chí điện tử của thư viện
[ ] Bách khoa toàn thư
[ ] Công tụ tìm kiếm như Google
[ ] Mục lục tra cứu thư viện
[ ] Tôi không biết

Bạn đang chuẩn bị một bài thuyết trình PowerPoint về cách học tiếng Anh. Bạn nghe nói rằng Bộ Giáo dục và Đào tạo vừa ban hành một quy định mới về việc thay đổi sách giáo khoa học tiếng Anh. Bạn muốn sử dụng thông tin này trong bài thuyết trình của mình. Bạn nên làm gì để xác minh thông tin này là đúng hay sai?

[ ] Hỏi bạn bè của bạn
[ ] Hỏi cha mẹ hoặc người chăm sóc bạn
[ ] Gọi điện thoại cho chủ nhà sách chỗ mà bạn vẫn hay mua sách
[ ] Hỏi thư viện

[ ] Tôi không biết

Đọc hai đoạn văn sau đây. Lựa chọn một câu mô tả mà cả hai đoạn văn đều đề cập tới.

Đoạn văn 1:

Theo số liệu thống kê của WHO (Tổ chức y tế thế giới): Trung bình mỗi năm, thế giới có trên 10 triệu người chết vì tai nạn giao thông. Năm 2006, riêng Trung Quốc có tới 89455 người chết vì các vụ tai nạn giao thông. Ở Việt Nam con số này là 12300. Năm 2007, WHO đặt Việt Nam vào Quốc gia có tỉ lệ các vụ tử vong vì tai nạn giao thông cao nhất thế giới với 33 trường hợp tử vong mỗi ngày.

Đoạn văn 2:

Hàng năm số vụ tai nạn giao thông vẫn không hề suy giảm, ngược lại nó còn tăng lên rất nhiều. Cứ mỗi năm, Việt Nam có tới gần một nghìn vụ tai nạn giao thông, nhiều nhất là xe máy. Nguyên nhân chính gây ra các vụ tai nạn phần lớn là do ý thức chấp hành luật lệ giao thông của người dân: uống rượu bia vượt quá nồng độ cho phép khi lái xe, không đội mũ bảo hiểm, chở trên ba người phóng nhanh vượt ẩu…

[ ] Việt Nam có tỷ lệ tử vọng vì tai nạn giao thông cao.

[ ] Tai nạn giao thông chủ yếu xảy ra ở người trẻ.

[ ] Việt Nam đang cố gắng giảm tải số tai nạn giao thông.

[ ] Tôi không biết

Theo bạn, đạo văn là gì?

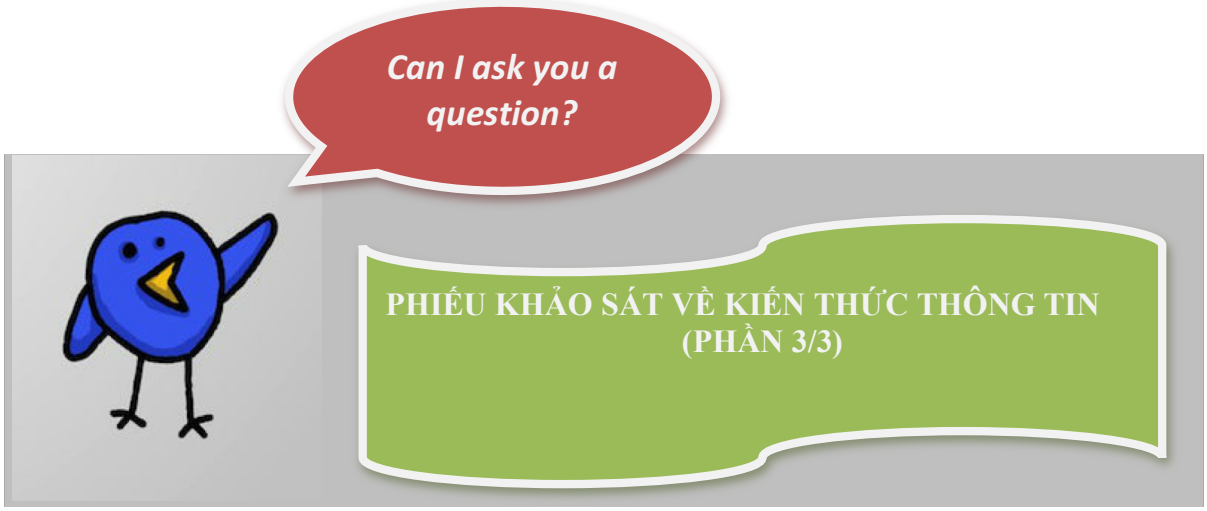
[ ] Trích dẫn một tác phẩm của người khác và cung cấp nguồn tham khảo trong mục lục tham khảo

[ ] Sử dụng tác phẩm của người khác như là của mình

[ ] Thảo luận về một quyển sách với bạn của mình

[ ] Tôi không biết


THANK
YOU!



Chân thành cảm ơn bạn vì đã bớt chút thời gian giúp tôi hoàn thành phiếu khảo sát này. Mục đích của đề tài này là nghiên cứu trình độ kiến thức thông tin của học sinh Trung học Phổ thông. Đây không phải là bài kiểm tra, do đó đừng quan tâm câu trả lời của bạn đúng hay sai. Khái niệm Kiến thức thông tin sẽ được giải thích đầy đủ hơn trong phiếu khảo sát. Tôi muốn nhấn mạnh rằng câu trả lời của bạn rất có giá trị đối với nghiên cứu này và do đó điều quan trọng là bạn cần trả lời tất cả các câu hỏi trong phiếu khảo sát này một cách đầy đủ và chân thực nhất có thể. Bạn vui lòng đừng thảo luận câu trả lời của các câu hỏi này với bạn bè hoặc giáo viên của bạn cho đến khi bạn hoàn thành bảng hỏi.

Chúng tôi ước lượng là bạn sẽ mất khoảng 15 phút để hoàn thành phiếu khảo sát này. Vui lòng gửi lại phiếu khảo sát sau khi hoàn thành cho tôi.

Vui lòng đánh dấu (X) vào những ô trống thích hợp (bạn vui lòng chỉ đánh dấu vào **MỘT** ô trống thích hợp nhất với bạn)

A: THÔNG TIN VỀ BẠN

1

Họ tên:……

C: KIẾN THỨC THÔNG TIN CỦA BẠN

26

Bạn cần tìm một bài báo về tỷ lệ gia tăng dân số của Việt Nam cho bài thuyết trình môn Địa lý của bạn. Theo quy định của luật bản quyền Việt Nam, bạn được sao chép ra một bản để sử dụng cho riêng một mình bạn và:

[ ] Tạo ra 3 bản copy cho các thành viên khác trong nhóm của bạn.

[ ] Tạo ra 10 bản copy và bán cho các bạn trong lớp.

[ ] Tạo ra 100 bản và chia sẻ trong trường trong một triển lãm về Ngày Dân số thế giới.

[ ] Tôi không biết

27

Bạn muốn sử dụng một vài tấm hình từ trong bộ sưu tập "Sài Gòn qua những bức ảnh" và đăng chúng trên trang Web của bạn. Bộ sưu tập ảnh này là của người khác. Bạn nên làm gì để không vi phạm luật bản quyền?

[ ] Sao chép và tải những bức ảnh đó lên trang Web của bạn

[ ] Xin phép từ người chủ nắm giữ bản quyền để sử dụng bộ sưu tập

[ ] Chỉnh sửa bộ sưu tập bằng cách loại bỏ hoặc thêm một vài bức ảnh và sau đó tải lên trang Web của bạn.

[ ] Sử dụng và khen ngợi bộ sưu tập.

[ ] Tôi không biết

28

Bạn phải nộp bài tập vào ngày mai nhưng mà bạn chưa làm gì cả. Vậy bạn nên làm gì?

[ ] Cố gắng hoàn thành nó trước hạn nộp dù biết rằng chất lượng bài của bạn không tốt như mong đợi.

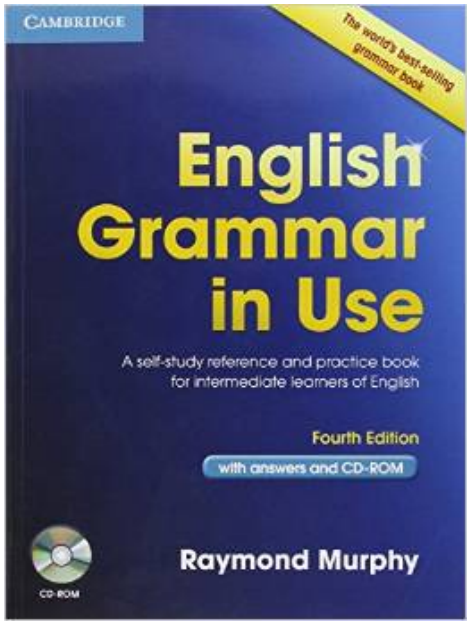
[ ] Viết thư hoặc gọi điện cho giáo viên của bạn và yêu cầu gia hạn thời gian nộp bài, mặc dù bạn có thể nhận điểm thấp hơn.

[ ] Mượn bài viết của chị bạn, bài viết này đã được nộp vào năm ngoái, thêm một số ghi chú của bạn và nộp đúng hạn.

[ ] Tôi không biết

29

Hình ảnh sau là trang bìa của một quyển sách, bạn có thể chỉ ra tên của quyển sách này là gì?



[ ] English grammar in use

[ ] English grammar in use: a self-study reference and practice book for intermediate learners of English

[ ] Raymond Murphy

[ ] Fourth edition

[ ] The world's best-selling grammar book: English grammar in use

[ ] Tôi không biết

30

Bạn tìm một quyển sách bằng cách sử dụng một cơ sở dữ liệu bằng tiếng Anh. Bạn tìm thấy một trích dẫn như sau:

HAHN, D., FLYNN, L. & REUBEN, S. 2008. The Ultimate Teen Book Guide, London, Walker.

Theo bạn "Walker" đề cập đến vấn đề gì sau đây?

[ ] Số tập

[ ] Số xuất bản

[ ] Nhà xuất bản

[ ] Tên của quyển sách

[ ] Tôi không biết

Bạn yêu thích những quyển tiểu thuyết về Harry Potter của nhà văn J. K. Rowling. Bạn muốn tìm những quyển sách được viết bằng tiếng Anh mà J. K. Rowling viết bằng cách sử dụng một công cụ tìm bằng tiếng Anh, loại tìm kiếm nào bạn sẽ sử dụng?

[ ] Tìm trong Title: Rowling

[ ] Tìm trong Author: Rowling

[ ] Tìm trong Subject: Rowling

[ ] Tôi không biết

Thông thường nhan đề bài báo sẽ nói cho người tìm về nội dung chung của nó. Bạn đang tìm kiếm những bài báo và quyển sách về sự phát triển của văn học dành cho thiếu nhi. Bạn tìm thấy một quyển sách có nhan đề như sau:

"**Written for Children: An Outline of English-language Children's Literature".** Bạn có nghĩ quyển sách này phù hợp với bạn không?

[ ] Có, quyển sách này phù hợp với tôi

[ ] Không, quyển sách này không phù hợp với tôi

[ ] Tôi không biết

So sánh hai đoạn văn sau, và sau đó nhận diện xem đoạn văn nào thảo luận về đề tài "Các vị vua của Việt Nam".

Đoạn văn 1: “The Hung dynasty produced 18 kings, each of whom ruled for 150 years. At this time, the nation was named **Van Lang**. This dynasty was then overthrown by a neighbouring king in 258 B.C. He established the new kingdom of **Au Lac** and built his capital at Phuc An, whose remains still exist today in the village of Co Loa, located west of Hanoi”.

Đoạn văn 2: "Unfortunately, life was rather chaotic for them wherever they lived. The repressive policies of South Vietnamese president **Ngo Dinh Diem** ultimately led to his assassination in 1963. Subsequent regimes didn't have any more popular support but were firmly entrenched, thanks to both the South Vietnamese and U.S. militaries”

[ ] Đoạn văn 1
[ ] Đoạn văn 2
[ ] Cả hai đoạn văn 1 và 2
[ ] Không có đoạn văn nào cả
[ ] Tôi không biết

Bạn đang chuẩn bị một bài thuyết trình PowePoint và giáo viên của bạn sẽ đưa nó lên mạng. Bạn tìm thấy một vài tấm hình đẹp từ một trang Web cùng với tin nhắn bằng tiếng Anh đi kèm như sau: "All of the images on this website are copyrighted. Please do not use any of them on a Web page, CD-ROM, printed or otherwise published work without receiving permission in advance from our site." Bạn sẽ làm gì?

[ ] Bạn phải xin phép người nắm giữ bản quyền của bức ảnh đó trước khi sử dụng.
[ ] Bạn phải xin phép để sử dụng bức ảnh đó trong bài thuyết trình PowerPoint nhưng có thể thoải mái tải những bức ảnh đó và để vào bài thuyết trình của mình biết rằng bạn vừa gửi thư xin phép.
[ ] Bạn phải xin phép người nắm giữ bản quyền và đồng thời cung cấp một trích dẫn tham khảo.
[ ] Bạn phải xin phép từ người nắm giữ bản quyền, cung cấp một trích dẫn tham khảo trong bài PowerPoint, và cung cấp một tham khảo trong danh mục tham

khảo của bạn.

[ ] Tôi không biết

Cuối cùng, bạn tự đánh giá thế nào về những gì bạn đã làm trong phần đánh giá trình độ kiến thức thông tin của bạn trong phiếu hỏi này và lựa chọn một con số thể hiện điểm của bạn (Chọn 5 cho mức cao nhất và 1 cho mức thấp nhất)

1	2	3	4	5
[ ]	[ ]	[ ]	[ ]	[ ]

Appendix 9. Pilot document review schedule – English version

1. Reports (School and library)

2. Library statistics
   - Library collection
     - The number of library collection
     - Print resource
   - Search facilities
     - Library catalogue (card and online)
     - Database

3. Documents in relation to IL initiatives (if any)
   - Guidelines
   - Policy
   - Posters
   - Programmes

4. Teacher's resources
   - Lesson plan
   - Study programme

Appendix 10. Pilot document review schedule – Vietnamese version

1. Báo cáo (trường học và thư viện)

2. Số liệu thống kê của thư viện
   - Bộ sưu tập của thư viện
     - Số lượng bộ sưu tập của thư viện
     - Nguồn tài liệu in
   - Chính sách tìm kiếm tài liệu của thư viện
     - Mục lục thư viện (Phiếu và trực tuyến)
     - Cơ sở dữ liệu

3. Các tài liệu liên quan đến hoạt động hỗ trợ học sinh trong việc tìm kiếm, đánh giá và sử dụng thông tin hoặc phát triển kỹ năng thông tin (nếu có)
   - Hướng dẫn
   - Chính sách
   - Posters
   - Chương trình

4. Nguồn tài liệu dành cho giáo viên
   - Kế hoạch giảng dạy
   - Chương trình giảng dạy

Appendix 11. Pilot interview questions for students – English version

1. It is recommended that, in order to achieve academic success, it is necessary to equip students with information literacy.
    - How is information literacy important?
    - What are your thoughts on this?
2. Have you received any formal instruction about information literacy or some aspects of information literacy, such as developing search strategies, evaluating information sources, using information ethically and using English to engage with information effectively?
    - If yes, please tell me:
        - Where does it take place?
        - What form does it take?
        - In what ways are the courses effective (or not) in your opinion?
        - Have you experienced any problems in current information literacy teaching which you feel should be improved?
    - If no, please tell me:
        - In your opinion, why is there no information literacy instructions for you?
        - Without instructions, how do you find, evaluate and use information?
3. From what you have been taught from your school, what would help you develop your information literacy? How could they help you develop your information literacy?
4. What else would help you develop your information literacy outside your school? In what ways? And what do they show you?
5. Introduce the expanded AASL model and then ask the interviewees: how might the model help you develop your information literacy?
6. Could you please give any suggestions to your school which will help you develop your information literacy?
7. Is there anything else you would like to share about information literacy not already covered here?

If you do not have anything else to mention, we can conclude the interview. Thank you very much indeed for your time and thoughtful answers.

Appendix 12. Pilot interview questions for students – Vietnamese version

1. Có ý kiến đề xuất rằng, việc trang bị kiến thức thông tin cho học sinh là cần thiết để giúp các em đạt được những thành công trong học tập.
   - Theo bạn thì học sinh cần kiến thức thông tin ở mức độ nào?
   - Bạn nghĩ như thế nào về ý kiến trên?
2. Bạn đã từng tham gia vào một chương trình hướng dẫn về kiến thức thông tin hoặc một vài khía cạnh của kiến thức thông tin một cách chính thức nào chưa, ví dụ như phát triển chiến lược tìm tin, đánh giá nguồn tin, sử dụng thông tin một cách có đạo đức và sử dụng tiếng Anh để tương tác với thông tin một cách hiệu quả?
   - Nếu có, bạn vui lòng chia sẻ thêm là:
     - Chương trình đó diễn ra ở đâu?
     - Chương trình đó diễn ra dưới hình thức nào?
     - Theo bạn các khóa học đó hiệu quả (hoặc không hiệu quả) ở điểm nào?
     - Bạn đã từng gặp phải bất kỳ vấn đề nào trong hoạt động giảng dạy kiến thức thông tin hiện nay mà bạn cảm thấy cần phải được cải thiện chưa?
   - Nếu không, bạn vui lòng chia sẻ thêm là :
     - Theo bạn, tại sao không có các hướng dẫn về kiến thức thông tin dành cho bạn?
     - Không có các hướng dẫn, bạn tìm kiếm, đánh giá và sử dụng thông tin bằng cách nào?
3. Từ những gì bạn được dạy ở trường, điều gì giúp bạn phát triển kiến thức thông tin của bạn thân? Nhà trường giúp bạn phát triển kiến thức thông tin bằng cách nào?
4. Điều gì giúp bạn phát triển kiến thức thông tin của bản thân bên ngoài nhà trường? Theo những cách như thế nào? Họ đã hướng dẫn cho bạn những gì?
5. Mô hình mở rộng về kiến thức thông tin của Hiệp hội các thư viện trường học ở Mỹ chỉ ra rằng học sinh cần đạt được 5 tiêu chuẩn dưới đây để trở thành một người có kiến thức thông tin. Theo tổ chức này, người có kiến thức thông tin cần phải có khả năng:
   - Tìm hiểu, tư duy mang tính phản biện và thu thập những kiến thức mới;
   - Đưa ra được những kết luận, đưa ra những quyết định đã được cân nhắc kỹ, áp dụng kiến thức đã học vào những trường hợp mới, và tạo ra được những kiến thức mới;
   - Chia sẻ kiến thức một cách hợp pháp như là một thành viên của xã hội dân chủ;
   - Theo đuổi sự phát triển về thẩm mỹ và sở thích cá nhân;

- Sử dụng ngoại ngữ để tương tác với thông tin một cách hiệu quả.

Theo bạn các tiêu chuẩn này có thể giúp bạn trở thành người có kiến thức thông tin như thế nào (hay nói cách khác, bạn nghĩ gì khi phát triển bản thân mình thành người có kiến thức thông tin dựa trên 5 tiêu chuẩn trên).

6. Bạn vui lòng cung cấp các đề xuất cho nhà trường để giúp bạn phát triển kiến thức thông tin của bản thân?
7. Bạn còn bất kỳ điều gì muốn chia sẻ về kiến thức thông tin mà vẫn chưa được đề cập đến trong bài phỏng vấn không?

Chân thành cảm ơn bạn

Appendix 13. Pilot interview questions for librarians – English version

1. Have you heard or read about information literacy?
2. In your opinion, what does information literacy mean?
3. Information literacy could be defined as follows: "Information Literacy is the ability to identify what information is needed, understand how the information is organized, identify the best sources of information for a given need, locate those sources, evaluate the sources critically, and share that information. It is the knowledge commonly used research techniques" (AASL).

   It is recommended that, in order to achieve academic success, it is necessary to equip students with information literacy.

   - How is information literacy important?
   - What are your thoughts on this?
4. What has your library done to support the development of students' information literacy?
5. The survey found that students' information literacy scores ranged from 39 to 87 out of 100. Most of students obtained average scores (>30 and < 70). What are your thoughts on this result?
6. The survey found that students were good at finding information, but weak at evaluating information sources. What are your thoughts on this result?
7. The student interviews found that some students thought that your library has not had any activity to support students in developing information literacy. What are your thoughts on this?
8. If the school delivers an information literacy programme, what do you expect to see in the programme?
9. Show the interviewees the expanded AASL model, and ask them: how is this model different from what you conceive of information literacy? What is your opinion on developing students' information literacy through the use of the expanded AASL model?
10. Could you please give any suggestions to your school which will help your students develop information literacy?
11. Is there anything else you would like to share about information literacy not already covered here?

If you do not have anything else to mention, we can conclude the interview. Thank you very much indeed for your time and thoughtful answers.

Appendix 14. Pilot interview questions for librarians – Vietnamese version

1. Anh/Chị vui lòng cho biết, Anh/Chị đã bao giờ đọc hoặc nghe nói về khái niệm "Kiến thức thông tin" chưa?
2. Anh/Chị định nghĩa như thế nào về kiến thức thông tin?
3. Một định nghĩa về kiến thức thông tin là "Kiến thức thông tin là khả năng nhận biết được mình cần thông tin gì, hiểu được thông tin được tổ chức như thế nào, nhận biết được những nguồn thông tin tốt nhất phù hợp nhu cầu của mình, xác định được những nguồn thông tin đó, đánh giá những nguồn tin một cách thận trọng, và chia sẻ thông tin đó"

   Có ý kiến đề xuất rằng, việc trang bị kiến thức thông tin cho học sinh là cần thiết để giúp các em đạt được những thành công trong học tập.

   - Theo Anh/Chị thì học sinh cần kiến thức thông tin ở mức độ nào?
   - Anh/Chị nghĩ như thế nào về ý kiến trên?
4. Anh/Chị vui lòng cho biết, thư viện Anh/Chị đã làm gì để hỗ trợ học sinh trong việc phát triển kiến thức thông tin?
5. Kết quả của một cuộc khảo sát gần đây cho thấy rằng đa số học sinh Việt Nam chỉ đạt điểm trung bình về kiến thức thông tin? Anh/Chị nhận định như thế nào về kết quả trên?
6. Kết quả từ một cuộc khảo sát gần đây cũng cho thấy rằng học sinh Việt Nam khá tốt trong việc tìm kiếm thông tin nhưng lại yếu trong việc đánh giá nguồn tin cũng như thông tin. Anh/Chị nhận định như thế nào về kết quả trên?
7. Trong một cuộc khảo sát gần đây, học sinh cho rằng thư viện trường học vẫn chưa có hoạt động gì để phát triển kiến thức thông tin của học sinh. Anh/Chị nhận định như thế nào về ý kiến trên?
8. Nếu nhà trường đưa ra một chương trình giảng dạy về kiến thức thông tin, Anh/Chị mong chờ điều gì ở chương trình này?
9. Có một mô hình mở rộng về kiến thức thông tin chỉ ra rằng học sinh cần đạt được 5 tiêu chuẩn dưới đây để trở thành một người có kiến thức thông tin. Theo mô hình này, người có kiến thức thông tin cần phải có khả năng:
   - Tìm hiểu, tư duy mang tính phản biện và thu thập những kiến thức mới;
   - Đưa ra được những kết luận, đưa ra những quyết định đã được cân nhắc kỹ, áp dụng kiến thức đã học vào những trường hợp mới, và tạo ra được những kiến thức mới;

- Chia sẻ kiến thức một cách hợp pháp như là một thành viên của xã hội dân chủ;
- Theo đuổi sự phát triển về thẩm mỹ và sở thích cá nhân;
- Sử dụng ngoại ngữ để tương tác với thông tin một cách hiệu quả.

Theo Anh/Chị, thư viện cần phải làm gì để giúp học sinh đạt được 5 tiêu chí trên? Mô hình này có khác gì so với những gì Anh/Chị mong chờ không? Anh/Chị có ý kiến gì về việc phát triển kiến thức thông tin của học sinh thông qua việc sử dụng mô hình này không?

10. Anh/Chị vui lòng cung cấp các đề xuất cho nhà trường để giúp học sinh phát triển kiến thức thông tin của bản thân?
11. Anh/Chị vui lòng cho biết, Anh/Chị còn bất kỳ điều gì muốn chia sẻ về kiến thức thông tin mà vẫn chưa được đề cập đến trong bài phỏng vấn không?

Chân thành cảm ơn Anh/Chị

Appendix 15. Pilot interview questions for administrators – English version

1. Have you heard or read about information literacy?
2. In your opinion, what does information literacy mean?
3. Information literacy could be defined as follows: "Information Literacy is the ability to identify what information is needed, understand how the information is organized, identify the best sources of information for a given need, locate those sources, evaluate the sources critically, and share that information. It is the knowledge commonly used research techniques" (AASL).

   It is recommended that, in order to achieve academic success, it is necessary to equip students with information literacy.

   - How is information literacy important?
   - What are your thoughts on this?
4. What has your school done to support the development of students' information literacy?
5. The survey found that students' information literacy scores ranged from 39 to 87 out of 100. Most of students obtained average scores (> 30 and < 70). What are your thoughts on this result?
6. The survey found that students were good at finding information, but weak at evaluating information sources. What are your thoughts on this result?
7. The student interviews found that there was no opportunities to develop information literacy because of the transmission approach in teaching and an overloaded study programme enforced by the Ministry of Education and Training. What are your thoughts on this result?
8. If the school delivers an information literacy programme, what do you expect to see in the programme?
9. Show the interviewees the expanded AASL model, and ask them: how is this model different from what you conceive of information literacy? What is your opinion on developing students' information literacy through the use of the expanded AASL model?
10. From the viewpoint of an administrator, could you please tell me which factors affect the implementation of an information literacy in the school?
11. Could you please give any suggestions to your school which will help your students develop information literacy?

12. Is there anything else you would like to share about information literacy not already covered here?

If you do not have anything else to mention, we can conclude the interview. Thank you very much indeed for your time and thoughtful answers.

Appendix 16. Pilot interview questions for administrators – Vietnamese version

1. Anh/Chị vui lòng cho biết, Anh/Chị đã bao giờ đọc hoặc nghe nói về khái niệm "Kiến thức thông tin" chưa?
2. Anh/Chị định nghĩa như thế nào về kiến thức thông tin?
3. Một định nghĩa về kiến thức thông tin là "Kiến thức thông tin là khả năng nhận biết được mình cần thông tin gì, hiểu được thông tin được tổ chức như thế nào, nhận biết được những nguồn thông tin tốt nhất phù hợp nhu cầu của mình, xác định được những nguồn thông tin đó, đánh giá những nguồn tin một cách thận trọng, và chia sẻ thông tin đó"

   Có ý kiến đề xuất rằng, việc trang bị kiến thức thông tin cho học sinh là cần thiết để giúp các em đạt được những thành công trong học tập.

   - Theo Anh/Chị thì học sinh cần kiến thức thông tin ở mức độ nào?
   - Anh/Chị nghĩ như thế nào về ý kiến trên?
4. Anh/Chị vui lòng cho biết, Trường của Anh/Chị đã làm gì để hỗ trợ học sinh trong việc phát triển kiến thức thông tin?
5. Kết quả của một cuộc khảo sát gần đây cho thấy rằng đa số học sinh Việt Nam chỉ đạt điểm trung bình về kiến thức thông tin? Anh/Chị nhận định như thế nào về kết quả trên?
6. Kết quả từ một cuộc khảo sát gần đây cũng cho thấy rằng học sinh Việt Nam khá tốt trong việc tìm kiếm thông tin nhưng lại yếu trong việc đánh giá nguồn tin cũng như thông tin. Anh/Chị nhận định như thế nào về kết quả trên?
7. Trong một cuộc khảo sát gần đây, học sinh cho rằng việc phải hoàn thành chương trình sách giáo khoa của Bộ Giáo dục & Đào tạo và phương pháp giảng dạy truyền thống "đọc-chép" chính là nguyên nhân khiến các em các em không có thời gian cũng như không có nhiều cơ hội để phát triển kiến thức thông tin của bản thân. Anh/Chị nhận định như thế nào về ý kiến trên?
8. Nếu nhà trường đưa ra một chương trình giảng dạy về kiến thức thông tin, Anh/Chị mong chờ điều gì ở chương trình này?
9. Có một mô hình mở rộng về kiến thức thông tin chỉ ra rằng học sinh cần đạt được 5 tiêu chuẩn dưới đây để trở thành một người có kiến thức thông tin. Theo mô hình này, người có kiến thức thông tin cần phải có khả năng:

   - Tìm hiểu, tư duy mang tính phản biện và thu thập những kiến thức mới;

- Đưa ra được những kết luận, đưa ra những quyết định đã được cân nhắc kỹ, áp dụng kiến thức đã học vào những trường hợp mới, và tạo ra được những kiến thức mới;
- Chia sẻ kiến thức một cách hợp pháp như là một thành viên của xã hội dân chủ;
- Theo đuổi sự phát triển về thẩm mỹ và sở thích cá nhân;
- Sử dụng ngoại ngữ để tương tác với thông tin một cách hiệu quả.

Mô hình này có khác gì so với những gì Anh/Chị mong chờ không? Anh/Chị có ý kiến gì về việc phát triển kiến thức thông tin của học sinh thông qua việc sử dụng mô hình này không?

10. Với vị trí là một người làm công tác quản lý, Anh/Chị vui lòng cho biết những yếu tố nào ảnh hưởng đến việc phát triển kiến thức thông tin cho học sinh trung học tại Việt Nam?
11. Với quan điểm của người làm công tác quản lý, Anh/Chị vui lòng cho biết các trường trung học tại Việt Nam nên làm gì để phát triển kiến thức thông tin cho học sinh?
12. Anh/Chị vui lòng cho biết, Anh/Chị còn bất kỳ điều gì muốn chia sẻ về kiến thức thông tin mà vẫn chưa được đề cập đến trong bài phỏng vấn không?

Chân thành cảm ơn Anh/Chị

Appendix 17. Pilot interview questions for teachers – English version

1. Have you heard or read about information literacy?
2. In your opinion, what does information literacy mean?
3. Information literacy could be defined as follows: "Information Literacy is the ability to identify what information is needed, understand how the information is organized, identify the best sources of information for a given need, locate those sources, evaluate the sources critically, and share that information. It is the knowledge commonly used research techniques" (AASL).

   It is recommended that, in order to achieve academic success, it is necessary to equip students with information literacy.

   - How is information literacy important?
   - What are your thoughts on this?
4. How does the subject that you are teaching support the development of students' information literacy?
5. What information literacy components are required in the curriculum, especially in your subject?
6. The survey found that students' information literacy scores ranged from 39 to 87 out of 100. Most of students obtained average scores (> 30 and < 70). What are your thoughts on this result?
7. The survey found that students were good at finding information, but weak at evaluating information sources. What are your thoughts on this result?
8. The student interviews found that there was no opportunities to develop information literacy because of the transmission approach in teaching and an overloaded study programme enforced by the Ministry of Education and Training. What are your thoughts on this result?
9. The student interviews found that there was no formal information literacy programmes in the school. However, some individual instructions from teachers that are provided when students conducted projects might help students develop information literacy. What are your thoughts on this result?
10. If the school delivers an information literacy programme, what do you expect to see in the programme?
11. Show the interviewees the expanded AASL model, and ask them: how is this model different from what you conceive of information literacy? What is your opinion on

developing students' information literacy through the use of the expanded AASL model?

12. Could you please give any suggestions to your school which will help your students develop information literacy?
13. Is there anything else you would like to share about information literacy not already covered here?

If you do not have anything else to mention, we can conclude the interview. Thank you very much indeed for your time and thoughtful answers.

Appendix 18. Pilot interview questions for teachers – Vietnamese version

1. Anh/Chị vui lòng cho biết, Anh/Chị đã bao giờ đọc hoặc nghe nói về khái niệm "Kiến thức thông tin" chưa?
2. Anh/Chị định nghĩa như thế nào về kiến thức thông tin?
3. Một định nghĩa về kiến thức thông tin là "Kiến thức thông tin là khả năng nhận biết được mình cần thông tin gì, hiểu được thông tin được tổ chức như thế nào, nhận biết được những nguồn thông tin tốt nhất phù hợp nhu cầu của mình, xác định được những nguồn thông tin đó, đánh giá những nguồn tin một cách thận trọng, và chia sẻ thông tin đó"

   Có ý kiến đề xuất rằng, việc trang bị kiến thức thông tin cho học sinh là cần thiết để giúp các em đạt được những thành công trong học tập.

   - Theo Anh/Chị thì học sinh cần kiến thức thông tin ở mức độ nào?
   - Anh/Chị nghĩ như thế nào về ý kiến trên?
4. Anh/Chị vui lòng cho biết, môn học mà Anh/Chị đang giảng dạy hỗ trợ gì cho học sinh trong việc phát triển kiến thức thông tin?
5. Anh/Chị vui lòng cho biết, chương trình giảng dạy, đặc biệt là môn học Anh/Chị đang giảng dạy có những yêu cầu gì liên quan đến kiến thông tin?
6. Kết quả của một cuộc khảo sát gần đây cho thấy rằng đa số học sinh Việt Nam chỉ đạt điểm trung bình về kiến thức thông tin? Anh/Chị nhận định như thế nào về kết quả trên?
7. Kết quả từ một cuộc khảo sát gần đây cũng cho thấy rằng học sinh Việt Nam khá tốt trong việc tìm kiếm thông tin nhưng lại yếu trong việc đánh giá nguồn tin cũng như thông tin. Anh/Chị nhận định như thế nào về kết quả trên?
8. Trong một cuộc khảo sát gần đây, học sinh cho rằng việc phải hoàn thành chương trình sách giáo khoa của Bộ Giáo dục & Đào tạo và phương pháp giảng dạy truyền thống "đọc-chép" chính là nguyên nhân khiến các em các em không có thời gian cũng như không có nhiều cơ hội để phát triển kiến thức thông tin của bản thân. Anh/Chị nhận định như thế nào về ý kiến trên?
9. Trong một cuộc khảo sát gần đây, học sinh cho rằng mặc dù kiến thức thông tin thì cần thiết, nhưng nhà trường vẫn chưa có một chương trình giảng dạy chính thức về kiến thức thông tin mà chủ yếu chỉ là những chia sẻ hỗ trợ nhỏ lẻ từ các giáo viên. Anh/Chị nhận định như thế nào về ý kiến trên?

10. Nếu nhà trường đưa ra một chương trình giảng dạy về kiến thức thông tin, Anh/Chị mong chờ điều gì ở chương trình này?
11. Có một mô hình mở rộng về kiến thức thông tin chỉ ra rằng học sinh cần đạt được 5 tiêu chuẩn dưới đây để trở thành một người có kiến thức thông tin. Theo mô hình này, người có kiến thức thông tin cần phải có khả năng:
    - Tìm hiểu, tư duy mang tính phản biện và thu thập những kiến thức mới;
    - Đưa ra được những kết luận, đưa ra những quyết định đã được cân nhắc kỹ, áp dụng kiến thức đã học vào những trường hợp mới, và tạo ra được những kiến thức mới;
    - Chia sẻ kiến thức một cách hợp pháp như là một thành viên của xã hội dân chủ;
    - Theo đuổi sự phát triển về thẩm mỹ và sở thích cá nhân;
    - Sử dụng ngoại ngữ để tương tác với thông tin một cách hiệu quả.

    Mô hình này có khác gì so với những gì Anh/Chị mong chờ không? Anh/Chị có ý kiến gì về việc phát triển kiến thức thông tin của học sinh thông qua việc sử dụng mô hình này không?
12. Anh/Chị vui lòng cung cấp các đề xuất cho nhà trường để giúp học sinh phát triển kiến thức thông tin của bản thân?
13. Anh/Chị vui lòng cho biết, Anh/Chị còn bất kỳ điều gì muốn chia sẻ về kiến thức thông tin mà vẫn chưa được đề cập đến trong bài phỏng vấn không?

Chân thành cảm ơn Anh/Chị

Appendix 19. Question scheme for the pilot questionnaire

Category	Question
DEMOGRAPHIC DATA	
Name	Q1
School	Q2
Gender	Q3
Age	Q4
Level of study	Q5
AWARENESS AND SELF-RATING	
Awareness of the IL concept	Q6
Self-rating - IL level	Q7
Self-rating – developing search strategies	Q8
Self-rating – evaluating information sources	Q9
Self-rating – using information ethically	Q10
Self-rating – using English to engage with information effectively	Q11
IL TEST	
Testing two IL standards: - Inquire, think critically and gain knowledge - Use foreign language to engage with information effectively	Q12-Q34
IL self-assessment	Q35

Appendix 20. Score scheme for the pilot questionnaire

Standards	Skills	Testing areas and indicators	Question	Answer					
				1	2	3	4	5	6
Standard 1	Developing search strategies	Call numbers (1.1.4)	Q12	0	0	1	0	0	N/A
		OPAC (1.1.1)	Q13	0	0	0	1	0	N/A
		Book table of contents (1.1.8)	Q14	0	1	0	0	0	N/A
		Book index (1.1.8)	Q15	0	1	0	0	0	N/A
		Narrowing search results (1.1.8)	Q16	1	0	0	N/A	N/A	N/A
		Broadening search results (1.1.8)	Q17	1	0	0	0	N/A	N/A
		Search fields (1.1.1)	Q18	0	0	1	0	0	N/A
		Boolean operators (1.1.8)	Q19	0	0	0	1	0	N/A
			Q20	0	1	0	0	0	N/A
		Truncation (1.1.8)	Q21	1	0	0	0	0	N/A
Standard 1	Evaluating information sources	Appropriate information sources (1.1.5)	Q22	0	1	0	0	0	N/A
		Authoritative information sources (1.1.5)	Q23	0	0	0	1	0	N/A
		Information content evaluation (1.1.7)	Q24	1	0	0	0	N/A	N/A
Standard 1	Using information	Plagiarism (1.3.1)	Q25	0	1	0	0	N/A	N/A
		Copyright (1.3.1)	Q26	1	0	0	0	N/A	N/A

	ethically		Q27	0	1	0	0	0	N/A
		Ethical/legal guidelines and instructions (1.3.3)	Q28	0	1	0	0	N/A	N/A
Standard 5	Using English to engage with information effectively	Identifying important information from text files and documents written in English	Q29	0	1	0	0	0	0
		Understanding the meaning of a citation written in English	Q30	0	0	1	0	0	N/A
		Identifying appropriate search fields presented in English	Q31	0	1	0	0	N/A	N/A
		Understanding the meaning of the English book's title	Q32	1	0	0	N/A	N/A	N/A
		Evaluating the content of information written in English	Q33	1	0	0	0	0	N/A
		Understanding the message in relation to ethical issues written in English	Q34	0	0	0	1	0	N/A

Appendix 21. Interview questions to seek students' feedback about the pilot questionnaire – English version

1. How do you think about the questionnaire lay-out? Is it clear and easy for you to complete?
2. How long did it take to complete three sections of the questionnaire?
3. How do you think about the length of the questionnaire? Is it too long?
4. Do you understand all the questions? Are there any questions which are very difficult to understand?
5. Are you familiar with the terms used in the questionnaire?
6. Is the questionnaire easy or difficult to you?
7. Are you familiar with the content of the questions?
8. Do you have any other comments on the pilot questionnaire?

Many thanks for your help!

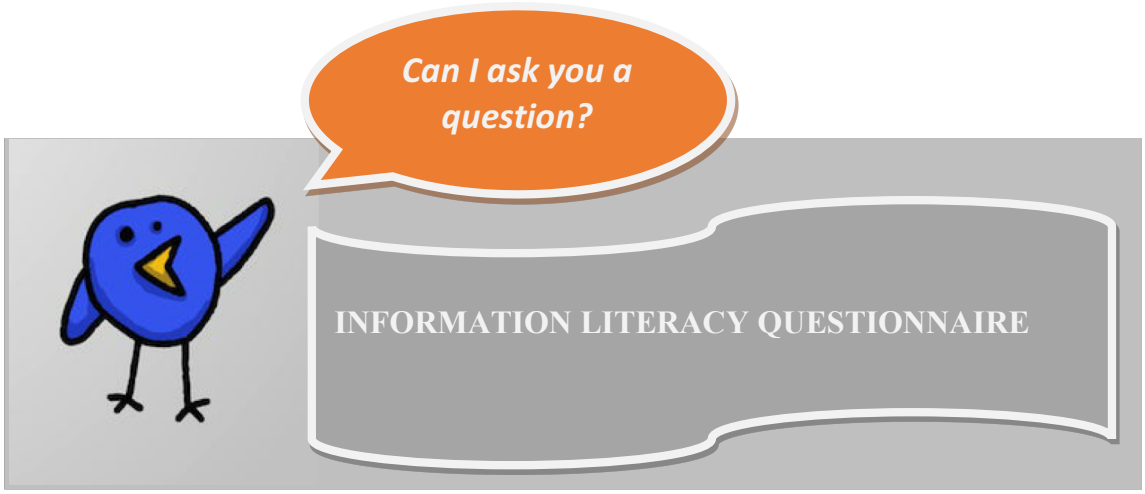
Appendix 22. Interview questions to seek students' feedback about the pilot questionnaire – Vietnamese version

1. Bạn nghĩ thế nào về cách thiết kế của bảng hỏi? Nó có được thiết kế rõ ràng và dễ cho bạn trả lời không?
2. Bạn mất thời gian bao lâu để hoàn thành cả ba phần của bảng hỏi này?
3. Bạn nghĩ thế nào về độ dài của bảng hỏi? Nó có quá dài không?
4. Bạn có hiểu tất cả các câu hỏi không? Có câu hỏi nào khiến bạn cảm thấy khó hiểu không?
5. Bạn có thấy quen thuộc với từ ngữ được sử dụng trong bảng hỏi không?
6. Bạn có nghĩ các câu hỏi trong bảng hỏi này quá khó để trả lời không?
7. Bạn có thấy quen thuộc với các nội dung được đề cập trong các câu hỏi không?
8. Bạn có ý kiến gì khác về bảng hỏi này không?

Chân thành cảm ơn sự cộng tác của bạn!

Appendix 23. Main questionnaire – English version

Student ID:	Code:



Thank you for taking the time to complete this questionnaire which aims to explore your information literacy level. It is not a test, so do not mind that your answer is right or wrong. I would like to emphasise that your responses are extremely valuable to the study, and it is important that you answer all the questions as honestly and fully as you can. Please do not discuss the answers of these questions with your friends and teachers until after you have completed the questionnaire.

We estimate that this will take you about….minutes to complete. Please return the questionnaire to Ms. Huyen.

Please tick (X) on appropriate box (tick one only)

A: ABOUT YOU

1 Name:……

2 Name of the school you are studying: ……

3

What is your gender? ☐ Male ☐ Female

4

Level of study

☐ Grade 10 ☐ Grade 11 ☐ Grade 12

B: AWARENESS AND SELF-RATING

5

Have you heard or read about the term "information literacy"?

☐ Yes ☐ No

If Yes, what does information literacy mean to you?

.....

.....

.....

.....

.....

C: YOUR INFORMATION LITERACY

6

Most libraries use call numbers to arrange their books. Call number shows you the exact location of the book and often appears on the spine of books.

How do you describe books which have the same or similar call numbers?

☐ They were written by the same author.

☐ They were bought at the same time.

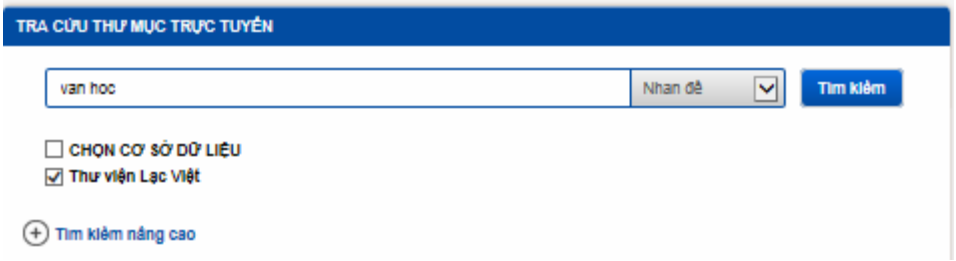
☐ They have the same or similar subjects.

☐ They have the same size.

☐ I do not know

7

If you want to search for the book “Van hoc” by using your online library catalogue (see picture), which search type would you choose?



- Tat ca (All fields)
- Tac gia (Author)
- Nhan de (Title)
- Linh vuc (Subject)
- I do not know

8

You found a book that is a biography of Ho Chi Minh. You need to find the chapter that deals with his work in the period 1940-1945. Which of the following do you use to locate the chapter on this period?

- Summary in the library catalogue
- Table of contents
- Index
- All of the above
- I do not know

9

You are reading a geography book and you want to find the passages on “Ha Noi”. Which of the following parts of the book would you use to locate the passages?

- Bibliography
- Index
- Preface
- Title page
- I do not know

Which of the following is **NOT** a search engine operator (also known as a Boolean operator)?

Search engine operators are special characters and words to get more specific search results.

- And
- Or
- Not
- Same
- I do not know

You want to find documents for your essay, but you aware that the topic has several synonyms, which search operator would you use?

Synonyms are words that mean the same or nearly the same as each other, for example, old people, old folks, elderly and senior citizens.

- And
- Or
- Not
- Near
- I do not know

Truncation searching is used to find all terms by using a portion of a word.

If you end a search term with a special symbol, such as Libr*, which of the following results would you retrieve?

- Library and librarian
- Library and Literature
- Interlibrary and library

- I do not now

13

When you search your school database for documents using “Van hoc”, you retrieve many documents. You want to narrow your search. Which of the following searches do you use?

- Van hoc and Viet Nam
- Van hoc or Van chuong
- I do not know

14

When you search your school database for documents using “Tre em”, you retrieve some documents. You want to retrieve more documents. Which of the following searches do you use?

- Tre em or Thieu nhi or Tre con
- Tre em and Thieu nhi and Tre con
- Tre em not Thieu nhi
- I do not know

15

When you want to find all the books written by Nguyen Tuan, which search type would you choose?

- Subject
- Title
- Author
- Keyword
- I do not know

16

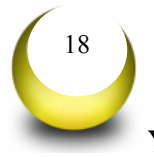
You have a plan to study abroad. You are searching for information about a country, the United Kingdom. Given the sources below, select the best place to begin your search.

- Library subscription electronic journal database

- Print and online encyclopaedia
- Internet search engine, such as Google
- Library online catalogue
- I do not know

What **DON'T** you use to evaluate the update of a web page?

- Web page update date
- The amount of information that a web page provides
- Last day when a notice is posted
- Links are working effectively or not
- I do not know



You are preparing a PowerPoint presentation on how to learn English. You hear that the Ministry of Education and Training has issued a new regulation to change English textbooks. You want to use this information in your presentation. What should you do to verify that this information is correct?

- Ask your friends
- Ask your parents or guardian
- Call bookstore owner where you often buy books
- Ask at the library
- I do not know

What **DON'T** you use to evaluate the authority of a web page?

- Qualifications of authors
- Prestige of sponsor
- Web domain (e.g. .org, .edu, .net, .com)
- The amount of information that a web page provides
- I do not know

Read the two paragraphs below. Select the statement on which both paragraphs agree.

Paragraph 1:

Theo số liệu thống kê của WHO (Tổ chức y tế thế giới): Trung bình mỗi năm, thế giới có trên 10 triệu người chết vì tai nạn giao thông. Năm 2006, riêng Trung Quốc có tới 89,455 người chết vì các vụ tai nạn giao thông. Ở Việt Nam con số này là 12,300. Năm 2007, WHO đặt Việt Nam vào Quốc gia có tỉ lệ các vụ tử vong vì tai nạn giao thông cao nhất thế giới với 33 trường hợp tử vong mỗi ngày.

Paragraph 2:

Hàng năm số vụ tai nạn giao thông vẫn không hề suy giảm, ngược lại nó còn tăng lên rất nhiều. Cứ mỗi năm, Việt Nam có tới gần một nghìn vụ tai nạn giao thông, nhiều nhất là xe máy. Nguyên nhân chính gây ra các vụ tai nạn phần lớn là do ý thức chấp hành luật lệ giao thông của người dân: uống rượu bia vượt quá nồng độ cho phép khi lái xe, không đội mũ bảo hiểm, chở trên ba người phóng nhanh vượt ẩu…

- Vietnam has high traffic-related death rate
- Traffic accidents occur in young people.
- Vietnam is trying to reduce the number of traffic accidents
- I do not know

What is plagiarism?

- Citing someone else's work and providing a reference in your bibliography.
- Using someone else's work as it is your own.
- Discussing a book with your classmate.
- I do not know

You find an important article about the population growth rate in Vietnam for your group presentation in your geography class. Under the copyright law of Vietnam, you are allowed to make a copy of the article for your own personal use and:

- Make 3 copies for other members in your team.
- Make 10 copies to sell to your classmates.
- Make 100 copies and share on campus for an exhibition of the World Population Day.
- I do not know

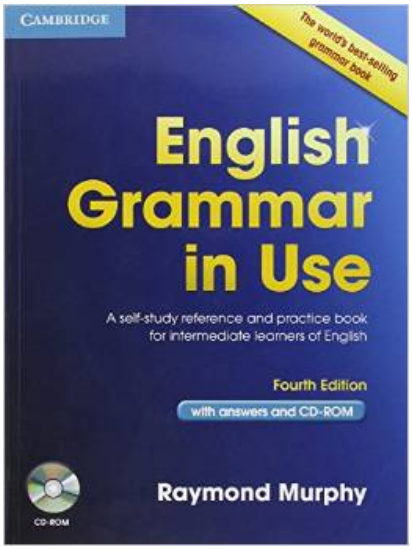
You would like to use some photos from a collection "Sai Gon in pictures" for your web page. What should you do in order to not break copyright laws?

- Copy and post the photos on your web page
- Ask for permission from copyright owner to use the collection
- Edit the collection by cutting or adding more photos and then post on your web page.
- Use and give credit to the collection.
- I do not know

You have to submit your assignment tomorrow but you have not done anything. What should you do?

- Try to finish it before deadline even if the quality of your work is not as good as expected.
- Email or call your teacher and ask for an extension on the due date, even though it will mean a lower grade.
- Borrow your older sister's paper that she used last semester in the same class, add some of your notes and turn the paper in on time.
- I do not know

The following image is from the first page of a book. Could you show the book's **FULL** title?



- English grammar in use
- English grammar in use: a self-study reference and practice book for intermediate learners of English
- Raymond Murphy
- Fourth edition
- The world's best-selling grammar book: English grammar in use
- I do not know

26

You search a book by using an English database. You find a citation as follow:

HAHN, D., FLYNN, L. & REUBEN, S. 2008. The Ultimate Teen Book Guide, London, Walker.

What does "Walker" refer to in the above citation?

- Volume number
- Issue number
- Publisher
- Title
- I do not know

27

You love J. K. Rowling's Harry Potter novels. You want to find books written in English that J. K. Rowling wrote by using an English search engine, which search type would you use?

- Title search on: Rowling
- Author search on: Rowling
- Subject search on: Rowling
- I do not know

Often the article title will alert the researcher to bias. You are searching for articles and books related to the development of children's literature. You find a book with title "**Written for children: an outline of English-language children's literature".** Do you think this book is suitable for you?

- Yes, the book is suitable
- No, the book is unsuitable
- I do not know

Compare the following two paragraphs, and then identify which paragraph discusses the topic "Kings of Vietnam".

Paragraph 1: "The Hung dynasty produced 18 kings, each of whom ruled for 150 years. At this time, the nation was named **Van Lang**. This dynasty was then overthrown by a neighbouring king in 258 B.C. He established the new kingdom of **Au Lac** and built his capital at Phuc An, whose remains still exist today in the village of Co Loa, located west of Hanoi".

Paragraph 2: "Unfortunately, life was rather chaotic for them wherever they lived. The repressive policies of South Vietnamese president **Ngo Dinh Diem** ultimately led to his assassination in 1963. Subsequent regimes didn't have any more popular support but were firmly entrenched, thanks to both the South Vietnamese and U.S. militaries"

- Paragraph 1
- Paragraph 2
- Both Paragraph 1 and 2
- Neither Paragraph 1 or 2
- I do not know

30

You are preparing a PowerPoint presentation that your teacher will post online. You have found some very effective photos from a website that has posted the following English message:

"*All of the images on this website are copyrighted. Please do not use any of them on a Web page, CD-ROM, printed or otherwise published work without receiving permission in advance from our site.*"

What will you do?

- You have to seek permission from the copyright owner before you use the photos.
- You have to ask for permission to use the photos in your PowerPoint presentation but can feel free to post the photos to your presentation knowing that you have applied for permission.
- You have to seek permission from the copyright owner and also provide a citation.
- You have to seek permission from the copyright owner, provide a citation in your PowerPoint, and give a reference in your bibliography.
- I do not know

B: AWARENESS AND SELF-RATING

31

How would you rate your ability to develop search strategies in order to find appropriate information? (Choose 5 for highest rating and 1 for lowest rating)

1	2	3	4	5

32

How would you rate your ability to evaluate information sources? (Choose 5 for highest rating and 1 for lowest rating)

1	2	3	4	5

33

How would you rate your ability to use information ethically? (Choose 5 for highest rating and 1 for lowest rating)

Using information ethically means there are copyright and intellectual property issues; for example, if you plan to use the information in an article, you cannot copy it without references to the information sources; for example, you cannot post a photo that belongs to another person on your own website if you do not seek permission from that person.

1	2	3	4	5

34

How would you rate your ability to use English to engage with information effectively? (Choose 5 for highest rating and 1 for lowest rating)

1	2	3	4	5

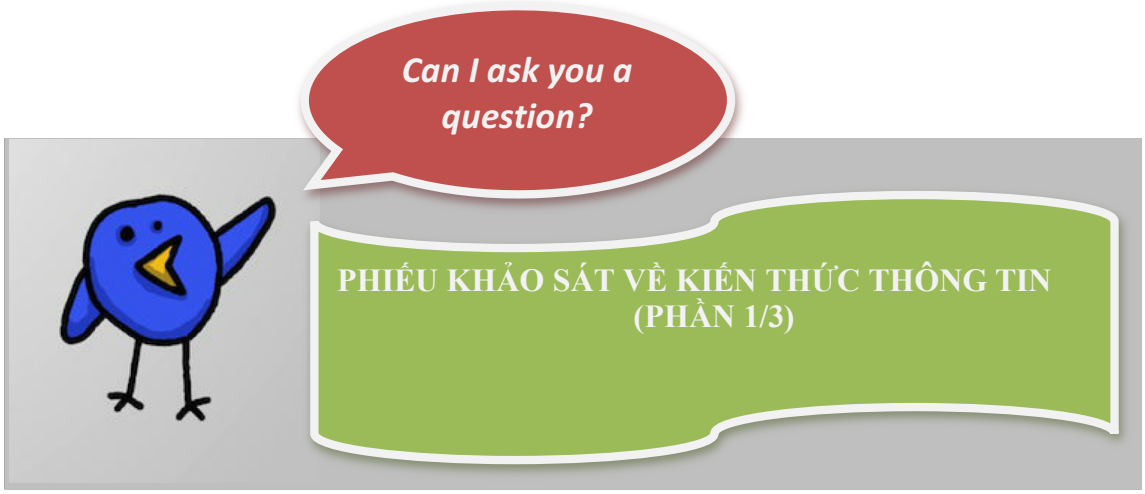
35

Finally, please reflect on how you think you did on this assessment of your information literacy level and select the number that best represents your score (choose 5 for highest rating and 1 for lowest rating).

1	2	3	4	5

Appendix 24. Main questionnaire – Vietnamese version

MSHS:	Mã hoá:



Chân thành cảm ơn bạn vì đã bớt chút thời gian giúp tôi hoàn thành phiếu khảo sát này. Mục đích của phiếu khảo sát này là nghiên cứu trình độ kiến thức thông tin của học sinh Trung học Phổ thông. Đây không phải là bài kiểm tra nên đừng quá lo lắng về việc câu trả lời là đúng hay sai. Tôi muốn nhấn mạnh rằng câu trả lời của bạn rất có giá trị đối với nghiên cứu này. Vì vậy, rất mong bạn trả lời tất cả các câu hỏi trong phiếu khảo sát này một cách đầy đủ và chân thực. Bạn vui lòng không thảo luận câu trả lời cho các câu hỏi này với bạn bè hoặc giáo viên của bạn cho đến khi bạn hoàn thành bảng hỏi. Phần hai của bảng hỏi này sẽ được gửi cho bạn vào ngày… để hoàn thành.

Chúng tôi ước lượng là bạn sẽ mất khoảng 5 phút để hoàn thành phiếu khảo sát này. Vui lòng gửi lại phiếu khảo sát sau khi hoàn thành cho Cô Huyền.

Vui lòng đánh dấu (X) vào những ô trống thích hợp (bạn vui lòng chỉ đánh dấu vào **MỘT** ô trống thích hợp nhất với bạn)

A: THÔNG TIN VỀ BẠN

1

Họ tên:……

2

Bạn đang theo học trường nào?: ……

3

Giới tính của bạn là gì? □ Nam □ Nữ

4

Bạn học lớp mấy?

□ Lớp 10 □ Lớp 11 □ Lớp 12

B: NHẬN THỨC VÀ TỰ ĐÁNH GIÁ

5

Bạn đã bao giờ đọc hoặc nghe nói về khái niệm "Kiến thức thông tin" chưa?

□ Có □ Không

Nếu có, theo bạn kiến thức thông tin là gì?

.....

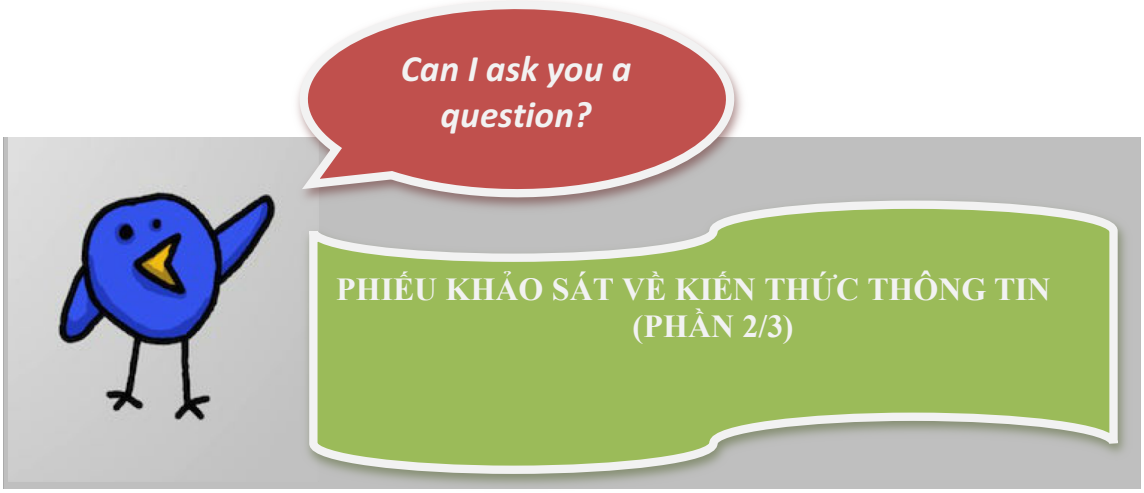
.....

.....

.....

.....

MSHS:	Mã hoá:



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A: THÔNG TIN VỀ BẠN

1

Họ tên: ……

C: KIẾN THỨC THÔNG TIN CỦA BẠN

6

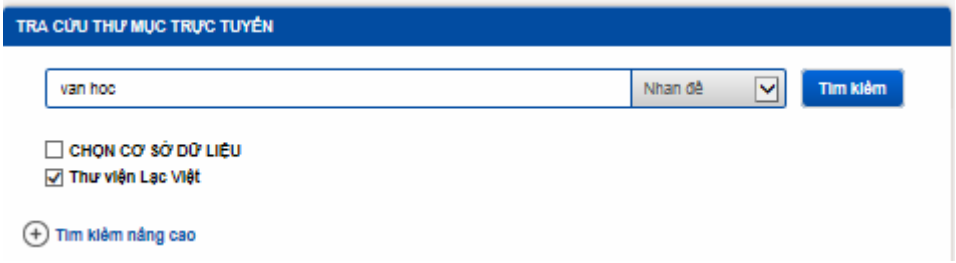
Hầu hết các thư viện đều sử dụng các kí hiệu để sắp xếp sách trong thư viện. Kí hiệu sách giúp bạn xác định được vị trí chính xác của quyển sách và thường xuất hiện trên gáy của quyển sách.

Vậy bạn mô tả như thế nào về những quyển sách có kí hiệu sách giống nhau hoặc tương tự nhau?

- Chúng được viết bởi cùng một tác giả
- Chúng được mua vào cùng một lúc
- Chúng có chủ đề giống hoặc gần giống nhau
- Chúng có cùng kích cỡ
- Tôi không biết

7

Nếu bạn muốn tìm những quyển sách về lĩnh vực "Văn học" bằng cách sử dụng mục lục tra cứu trực tuyến của thư viện (xem hình), bạn sử dụng loại tìm kiếm nào sau đây?



- Tất cả
- Tác giả
- Nhan đề
- Chủ đề
- Tôi không biết

8

Bạn đang có một quyển sách về tiểu sử của Chủ tịch Hồ Chí Minh. Bạn cần tìm chương sách nói về các tác phẩm của Bác trong giai đoạn 1940-1945. Bạn sử dụng công cụ nào sau đây để xác định chương sách đó?

- Bản tóm tắt trong mục lục thư viện
- Mục lục sách
- Bảng chú dẫn
- Tất cả các lựa chọn trên
- Tôi không biết

9

Bạn đang đọc một quyển sách Địa lý và bạn muốn tìm những đoạn văn viết về Hà Nội. Bạn sẽ dùng phần nào sau đây trong quyển sách để xác định vị trí của những đoạn văn đó?

- Danh mục tài liệu tham khảo
- Bảng chú dẫn
- Lời nói đầu
- Trang nhan đề
- Tôi không biết

10

Trong những lựa chọn sau, cái nào **KHÔNG PHẢI** là toán tử tìm kiếm Bool?

- And
- Or
- Not
- Same
- Tôi không biết

11

Bạn muốn tìm tài liệu cho bài văn của mình, nhưng bạn biết rằng đề tài của bạn có nhiều từ đồng nghĩa, toán tử tìm kiếm nào bạn sẽ sử dụng?

Từ đồng nghĩa là những từ có nghĩa giống hoặc gần giống nhau, ví dụ: người già, người cao tuổi, cao niên

- And
- Or

- Not
- Near
- Tôi không biết

Toán tử chặt từ được sử dụng để tìm tất cả những thuật ngữ có liên quan bằng cách sử dụng một phần của một từ.

Nếu bạn kết thúc một thuật ngữ tìm bằng một ký hiệu đặc biệt, như là Libr*, theo bạn bạn sẽ thu được những kết quả nào sau đây?

- Library và librarian
- Library và Literature
- Interlibrary và library
- Tôi không biết

Khi bạn tìm trong cơ sở dữ liệu trường của bạn những tài liệu về chủ đề "Văn học", bạn tìm được quá nhiều tài liệu. Bạn muốn thu hẹp kết quả tìm của mình để nhận được ít tài liệu hơn. Bạn sẽ sử dụng biểu thức tìm nào sau đây?

- Văn học and Việt Nam
- Văn học or Văn chương
- Tôi không biết

Khi bạn tìm trong cơ sở dữ liệu trường của bạn những tài liệu viết về trẻ em, bạn sử dụng thuật ngữ tìm "Trẻ em" nhưng có quá ít kết quả tìm. Bạn muốn tìm được thêm nhiều tài liệu hơn. Bạn sẽ sử dụng biểu thức tìm nào sau đây?

- Trẻ em or Thiếu nhi or Trẻ con
- Trẻ em and Thiếu nhi and Trẻ con
- Trẻ em not Thiếu nhi
- Tôi không biết

15

Khi bạn muốn tìm tất cả những quyển sách được viết bởi nhà văn Nguyễn Tuân, loại tìm kiếm nào sau đây bạn sẽ sử dụng?

- Chủ đề
- Nhan đề
- Tác giả
- Từ khóa
- Tôi không biết

16

Bạn lên kế hoạch đi du học. Bạn đang tìm kiếm thông tin về một đất nước đó là Anh quốc. Trong những nguồn thông tin sau đây, hãy chọn ra nguồn tốt nhất để bắt đầu việc tìm kiếm của bạn.

- Cơ sở dữ liệu tạp chí điện tử của thư viện
- Bách khoa toàn thư
- Công tụ tìm kiếm như Google
- Mục lục tra cứu thư viện trực tuyến
- Tôi không biết

17

Để đánh giá tính cập nhật của một trang Web, bạn **KHÔNG** căn cứ vào yếu tố nào sau đây?

- Ngày trang Web được cập nhật
- Số lượng thông tin mà trang Web cung cấp
- Ngày đăng tải thông báo mới nhất
- Các đường liên kết (link) có làm việc hiệu quả hay không
- Tôi không biết

18

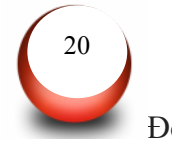
Bạn đang chuẩn bị một bài thuyết trình bằng PowerPoint về cách học tiếng Anh. Bạn nghe nói rằng Bộ Giáo dục và Đào tạo vừa ban hành một quy định mới về việc

thay đổi sách giáo khoa học tiếng Anh. Bạn muốn sử dụng thông tin này trong bài thuyết trình của mình. Bạn nên làm gì để xác minh thông tin này là đúng hay sai?

- Hỏi bạn bè của bạn
- Hỏi cha mẹ hoặc người chăm sóc bạn
- Gọi điện thoại cho chủ nhà sách mà bạn vẫn hay mua sách
- Hỏi thư viện hoặc giáo viên
- Tôi không biết

Để đánh giá tính đáng tin cậy của một trang Web, bạn **KHÔNG** căn cứ vào yếu tố nào sau đây?

- Tên tuổi và bằng cấp của tác giả
- Uy tín của tổ chức bảo trợ
- Tên miền của trang Web (ví dụ: .org, .edu, .net, .com)
- Số lượng thông tin trang Web cung cấp
- Tôi không biết



Đọc hai đoạn văn sau đây. Lựa chọn một câu mô tả mà cả hai đoạn văn đều đề cập tới.

Đoạn văn 1:

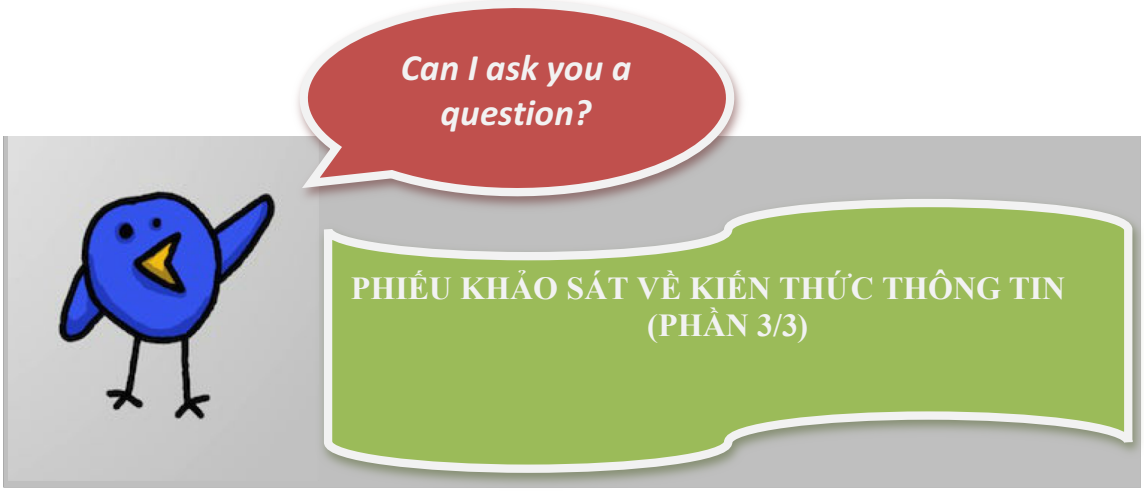
Theo số liệu thống kê của WHO (Tổ chức y tế thế giới): Trung bình mỗi năm, thế giới có trên 10 triệu người chết vì tai nạn giao thông. Năm 2006, riêng Trung Quốc có tới 89,455 người chết vì các vụ tai nạn giao thông. Ở Việt Nam con số này là 12,300. Năm 2007, WHO đặt Việt Nam vào Quốc gia có tỉ lệ các vụ tử vong vì tai nạn giao thông cao nhất thế giới với 33 trường hợp tử vong mỗi ngày.

Đoạn văn 2:

Hàng năm số vụ tai nạn giao thông vẫn không hề suy giảm, ngược lại nó còn tăng lên rất nhiều. Cứ mỗi năm, Việt Nam có tới gần một nghìn vụ tai nạn giao thông, nhiều nhất là xe máy. Nguyên nhân chính gây ra các vụ tai nạn phần lớn là do ý thức chấp hành luật lệ giao thông của người dân: uống rượu bia vượt quá nồng độ cho phép khi lái xe, không đội mũ bảo hiểm, chở trên ba người phóng nhanh vượt ẩu…

- Việt Nam có tỷ lệ tử vọng vì tai nạn giao thông cao.
- Tai nạn giao thông chủ yếu xảy ra ở người trẻ.
- Việt Nam đang cố gắng giảm tải số tai nạn giao thông.
- Tôi không biết

MSHS:	Mã hoá:



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A: THÔNG TIN VỀ BẠN

1

Họ tên:……

C: KIẾN THỨC THÔNG TIN CỦA BẠN

21

Theo bạn, đạo văn là gì?

- Trích dẫn một tác phẩm của người khác và cung cấp nguồn tham khảo trong mục lục tham khảo
- Sử dụng tác phẩm của người khác như là của mình
- Thảo luận về một quyển sách với bạn của mình
- Tôi không biết

22

Bạn cần tìm một bài báo về tỷ lệ gia tăng dân số của Việt Nam cho bài thuyết trình môn Địa lý của bạn. Theo quy định của luật bản quyền Việt Nam, bạn được sao chép ra một bản để sử dụng cho riêng một mình bạn và:

- Tạo ra 3 bản copy cho các thành viên khác trong nhóm của bạn.
- Tạo ra 10 bản copy và bán cho các bạn trong lớp.
- Tạo ra 100 bản và chia sẻ trong trường trong một triển lãm về Ngày Dân số thế giới.
- Tôi không biết

23

Bạn muốn sử dụng một vài tấm hình từ trong bộ sưu tập *"Sài Gòn qua những bức ảnh"* và đăng chúng trên trang Web của bạn. Bộ sưu tập ảnh này là của người khác. Bạn nên làm gì để không vi phạm luật bản quyền?

- Sao chép và tải những bức ảnh đó lên trang Web của bạn
- Xin phép từ người nắm giữ bản quyền để sử dụng bộ sưu tập
- Chỉnh sửa bộ sưu tập bằng cách loại bỏ hoặc thêm một vài bức ảnh và sau đó tải lên trang Web của bạn.
- Sử dụng và khen ngợi bộ sưu tập.
- Tôi không biết

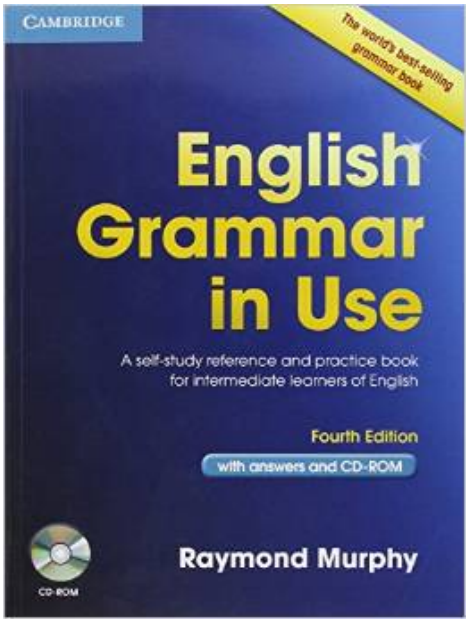
24

Bạn phải nộp bài tập vào ngày mai nhưng bạn chưa làm gì cả. Vậy bạn nên làm gì?

- Cố gắng hoàn thành nó trước hạn nộp dù biết rằng chất lượng bài của bạn không tốt như mong đợi.
- Viết thư hoặc gọi điện cho giáo viên của bạn và yêu cầu gia hạn thời gian nộp bài, mặc dù bạn có thể nhận điểm thấp hơn.
- Mượn bài viết của chị bạn, bài viết này đã được nộp vào năm ngoái, thêm một số ghi chú của bạn và nộp đúng hạn.
- Tôi không biết

25

Hình ảnh sau là trang bìa của một quyển sách, bạn có thể chỉ ra tên **ĐẦY ĐỦ** của quyển sách này là gì?



- English grammar in use
- English grammar in use: a self-study reference and practice book for intermediate learners of English
- Raymond Murphy
- Fourth edition
- The world's best-selling grammar book: English grammar in use

 Tôi không biết

Bạn tìm một quyển sách bằng cách sử dụng một cơ sở dữ liệu bằng tiếng Anh. Bạn tìm thấy một trích dẫn như sau:

HAHN, D., FLYNN, L. & REUBEN, S. 2008. The Ultimate Teen Book Guide, London, Walker.

Theo bạn "Walker" đề cập đến yếu tố gì sau đây?

 Số tập

 Số xuất bản

 Nhà xuất bản

 Tên của quyển sách

 Tôi không biết

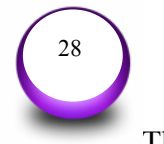
Bạn yêu thích những quyển tiểu thuyết về Harry Potter của nhà văn J. K. Rowling. Bạn muốn tìm những quyển sách được viết bằng tiếng Anh của J. K. Rowling bằng cách sử dụng một công cụ tìm bằng tiếng Anh, loại tìm kiếm nào bạn sẽ sử dụng?

 Tìm trong Title: Rowling

 Tìm trong Author: Rowling

 Tìm trong Subject: Rowling

 Tôi không biết



Thông thường nhan đề quyển sách/bài báo sẽ nói cho người tìm về nội dung chung của nó. Bạn đang tìm kiếm những bài báo và quyển sách về sự phát triển của văn học dành cho thiếu nhi. Bạn tìm thấy một quyển sách có nhan đề như sau:

"**Written for children: an outline of English-language children's literature"**

Bạn có nghĩ quyển sách này phù hợp với bạn không?

 Có, quyển sách này phù hợp với tôi

 Không, quyển sách này không phù hợp với tôi

 Tôi không biết

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So sánh hai đoạn văn sau, và sau đó nhận diện xem đoạn văn nào thảo luận về đề tài “Các vị vua của Việt Nam”.

Đoạn văn 1: “The Hung dynasty produced 18 kings, each of whom ruled for 150 years. At this time, the nation was named **Van Lang.** This dynasty was then overthrown by a neighbouring king in 258 B.C. He established the new kingdom of **Au Lac** and built his capital at Phuc An, whose remains still exist today in the village of Co Loa, located west of Hanoi”.

Đoạn văn 2: "Unfortunately, life was rather chaotic for them wherever they lived. The repressive policies of South Vietnamese president **Ngo Dinh Diem** ultimately led to his assassination in 1963. Subsequent regimes didn't have any more popular support but were firmly entrenched, thanks to both the South Vietnamese and U.S. militaries”

- Đoạn văn 1
- Đoạn văn 2
- Cả hai đoạn văn 1 và 2
- Không có đoạn văn nào cả
- Tôi không biết

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Bạn đang chuẩn bị một bài thuyết trình bằng PowePoint và giáo viên của bạn sẽ đưa nó lên mạng. Bạn tìm thấy một vài tấm hình đẹp từ một trang Web cùng với tin nhắn bằng tiếng Anh đi kèm như sau:

"*All of the images on this website are copyrighted. Please do not use any of them on a Web page, CD-ROM, printed or otherwise published work without receiving permission in advance from our site.*"

Bạn sẽ làm gì?

- Bạn phải xin phép người nắm giữ bản quyền của bức ảnh đó trước khi sử dụng.
- Bạn sử dụng bức ảnh trước và xin phép người nắm giữ bản quyền của bức ảnh sau.
- Bạn phải xin phép người nắm giữ bản quyền và đồng thời cung cấp một trích dẫn tham khảo.

- Bạn phải xin phép từ người nắm giữ bản quyền, cung cấp một trích dẫn tham khảo trong bài PowerPoint, và cung cấp thông tin tham khảo trong danh mục tài liệu tham khảo của bạn.
- Tôi không biết

B: NHẬN THỨC VÀ TỰ ĐÁNH GIÁ

Bạn tự đánh giá thế nào về khả năng của bạn trong việc tìm kiếm thông tin? (Chọn 5 cho mức cao nhất và 1 cho mức thấp nhất)

1	2	3	4	5

Bạn tự đánh giá thế nào về khả năng của bạn trong việc đánh giá các nguồn thông tin? (Chọn 5 cho mức cao nhất và 1 cho mức thấp nhất)

1	2	3	4	5

Bạn tự đánh giá như thế nào về khả năng của bạn trong việc sử dụng thông tin một cách có đạo đức? (Chọn 5 cho mức cao nhất và 1 cho mức thấp nhất)

Sử dụng thông tin có đạo đức tức là tuân theo luật bản quyền và luật sở hữu trí tuệ. Ví dụ, nếu bạn sử dụng thông tin trong một bài báo, bạn không thể chỉ đơn giản là sao chép nó mà không chỉ ra nguồn tham khảo. Ví dụ, bạn không thể tải một tấm hình thuộc về người khác lên trang web riêng của bạn nếu bạn không hỏi ý kiến của người đó.

1	2	3	4	5

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Bạn tự đánh giá thế nào về khả năng của bạn trong việc sử dụng tiếng Anh để tương tác với thông tin? (Chọn 5 cho mức cao nhất và 1 cho mức thấp nhất)

1	2	3	4	5

36

Cuối cùng, bạn tự đánh giá thế nào về những gì bạn đã làm trong phần đánh giá trình độ kiến thức thông tin của bạn trong phiếu hỏi này và lựa chọn một con số thể hiện điểm của bạn (Chọn 5 cho mức cao nhất và 1 cho mức thấp nhất).

1	2	3	4	5

Appendix 25. Main interview question for students – English version

Information literacy is defined as "the ability to identify what information is needed, understand how the information is organized, identify the best sources of information for a given need, locate those sources, evaluate the sources critically, and share that information. It is the knowledge commonly used research techniques" (AASL).

For example:

- Identifying and organising appropriate terms related to information needs
- Using keyword to find information
- Using controlled vocabulary and sources to broaden and narrow a search
- Identifying sources related to information needs
- Referencing and citation and the ethical and legal issues surrounding effective use of information

1. It is recommended that, in order to achieve academic success, it is necessary to equip students with information literacy.
    - How is information literacy important?
    - What are your thoughts on this?
2. What formal instructions (if any) have you received regarding information literacy or some aspects of information literacy, such as developing search strategies, evaluating information sources, using information ethically and using English to engage with information effectively?
    - If yes, please tell me:
        - Where does it take place?
        - What form does it take?
        - In what ways are the courses effective (or not) in your opinion?
        - Have you experienced any problems in current information literacy teaching which you feel should be improved?
    - If no, please tell me:
        - In your opinion, why is there no information literacy instructions for you?
        - Without instructions, how do you find, evaluate and use information?
3. From what you have been taught from your school, what would help you develop your information literacy? How could they help you develop your information literacy?

4. What else would help you develop your information literacy outside your school? In what ways? And what do they show you?
5. Could you please give any suggestions to your school which will help you develop your information literacy?
6. Is there anything else you would like to share about information literacy not already covered here?

If you do not have anything else to mention, we can conclude the interview. Thank you very much indeed for your time and thoughtful answers.

Appendix 26. Main interview questions for students – Vietnamese version

Khái niệm "Kiến thức thông tin" được định nghĩa như sau:
"Kiến thức thông tin là khả năng nhận biết được mình cần thông tin gì, hiểu được thông tin được tổ chức như thế nào, nhận biết được những nguồn thông tin phù hợp với nhu cầu của mình, xác định được những nguồn thông tin đó, đánh giá những nguồn tin một cách thận trọng, và chia sẻ thông tin" (AASL).
Ví dụ:

- Nhận diện và tổ chức thuật ngữ tìm kiếm thông tin phù hợp với nhu cầu tin của bản thân
- Sử dụng từ khoá để tìm tin
- Biết cách sử dụng thuật ngữ tìm kiếm có kiểm soát để mở rộng hoặc thu hẹp kết quả tìm
- Nhận diện được những nguồn thông tin phù hợp với nhu cầu tin của bản thân
- Cung cấp các trích dẫn và danh mục tài liệu tham khảo khi trích dẫn tác phẩm của người khác
- Tuân thủ theo luật bản quyền và luật sở hữu trí tuệ khi sử dụng thông tin

Câu hỏi 1: Có ý kiến cho rằng, việc trang bị kiến thức thông tin cho học sinh là cần thiết để giúp các em đạt được những thành công trong học tập.

- Theo bạn thì kiến thức thông tin quan trọng như thế nào?
- Bạn nghĩ như thế nào về ý kiến trên?

Câu hỏi 2: Những chương trình/hướng dẫn chính thức nào về kiến thức thông tin (nếu có) mà bạn đã được học?

- Nếu đã từng được học, bạn vui lòng chia sẻ thêm là:
  - Chương trình đó diễn ra ở đâu?
  - Chương trình đó diễn ra dưới hình thức nào?
  - Các khóa học đó hiệu quả (hoặc không hiệu quả) như thế nào?
  - Những vấn đề nào trong hoạt động giảng dạy kiến thức thông tin hiện nay mà bạn cảm thấy cần phải được cải thiện?
- Nếu chưa từng được học, bạn vui lòng chia sẻ thêm là :
  - Theo bạn, tại sao không có các hướng dẫn hoặc chương trình giảng dạy chính thức về kiến thức thông tin dành cho bạn?

- Không có các hướng dẫn chính thức về kiến thức thông tin, bạn tìm kiếm, đánh giá và sử dụng thông tin bằng cách nào?

Câu hỏi 3: Từ những gì bạn được dạy ở trường, điều gì giúp bạn phát triển kiến thức thông tin của bản thân? Nhà trường giúp bạn phát triển kiến thức thông tin bằng cách nào?

Câu hỏi 4: Điều gì giúp bạn phát triển kiến thức thông tin của bản thân bên ngoài nhà trường? Bằng cách nào? Họ đã hướng dẫn cho bạn những gì?

Câu hỏi 5: Bạn vui lòng cung cấp các đề xuất cho nhà trường để giúp bạn phát triển kiến thức thông tin của bản thân.

Câu hỏi 6: Bạn còn bất kỳ điều gì muốn chia sẻ về kiến thức thông tin mà vẫn chưa được đề cập đến trong bài phỏng vấn không?

Chân thành cảm ơn bạn

Appendix 27. Main interview questions for teachers – English version

1. Have you heard or read about information literacy?
2. Where did you hear or read about it?
3. The term "information literacy" will be fully explained below. However, before reading the explanation, in your opinion, what does information literacy mean?
4. Information literacy could be defined as follows: "Information Literacy is the ability to identify what information is needed, understand how the information is organized, identify the best sources of information for a given need, locate those sources, evaluate the sources critically, and share that information. It is the knowledge commonly used in research techniques" (AASL).

   For example:

   - Identifying and organising appropriate terms related to information needs
   - Using keyword to find information
   - Using controlled vocabulary and sources to broaden and narrow a search
   - Identifying sources related to information needs
   - Referencing and citation and the ethical and legal issues surrounding effective use of information

   It is recommended that, in order to achieve academic success, it is necessary to equip students with information literacy.

   - How is information literacy important?
   - What are your thoughts on this?
5. How does information literacy support your teaching?
6. In what ways have you supported students in their information literacy development?
7. What information literacy components are required in the curriculum, especially in your subject?
8. The survey found that students' information literacy scores ranged from 12 to 84 out of 100, with a mean score at 46.43/100. 82% of the students achieved average scores (≥30 and <70), 13.7% of them obtained low scores (<30) and only 4.4% of them had high score performance (≥70). What are your thoughts on this result?
9. The survey found that, out of the four IL testing areas, the best scored aspect was using information ethically (mean score: 60.11). Meanwhile, the least scored side was evaluating information sources (mean score: 38.36). The performing mean scores of the ability to develop search strategies and use English to engage with information

effectively were 43.28 and 49.40, correspondingly. This indicates that students were better in finding and using information than evaluating sources. What are your thoughts on this result?

10. The survey found that public school students had better information literacy performance than private school students. What are your thoughts on this result?
11. The survey found that students were familiar with online search engines, especially Google, than others. What are your thoughts on this result?
12. The survey found that Grade 12 students had higher scores in information literacy and almost all IL testing aspects than the two other grades. However, although Grade 11 students are at higher academic level, they had lower scores in overall information literacy and almost all information literacy testing aspects than Grade 10 students. What are your thoughts on this result?
13. The survey found that students rated their ability of information literacy and almost information literacy aspects, except using English to engage with information effectively, at an average and high level. What are your thoughts on this result?
14. The student interviews found that there was no formal information literacy programmes in the schools. However, some individual instructions from teachers that were provided when students conducted project work, might help students develop information literacy. What are your thoughts on this result?
15. If the school delivers an information literacy programme, what would you expect to see in the programme?
16. Could you please give any suggestions to your school which will help your students develop information literacy?
17. Is there anything else you would like to share about information literacy not already covered here?

If you do not have anything else to mention, we can conclude the interview. Thank you very much indeed for your time and thoughtful answers.

Appendix 28. Main interview questions for teachers – Vietnamese version

1. Anh/Chị vui lòng cho biết, Anh/Chị đã bao giờ đọc hoặc nghe nói về khái niệm "kiến thức thông tin" (trong tiếng Anh là Information Literacy) chưa?
2. Nếu đã từng nghe hoặc đọc về khái niệm “kiến thức thông tin” (Information literacy), Anh/Chị vui lòng cho biết Anh/Chị đã nghe đến khái niệm này ở đâu?
3. Khái niệm kiến thức thông tin sẽ được giải thích đầy đủ trong phần sau. Tuy nhiên, trước khi được giải thích, Anh/Chị đã từng nghĩ kiến thức thông tin là gì?
4. Khái niệm “kiến thức thông tin” được định nghĩa như sau:

“Kiến thức thông tin là khả năng nhận biết được mình cần thông tin gì, hiểu được thông tin được tổ chức như thế nào, nhận biết được những nguồn thông tin phù hợp với nhu cầu của mình, xác định được những nguồn thông tin đó, đánh giá những nguồn tin một cách thận trọng, và chia sẻ thông tin” (AASL).

Ví dụ:

- Nhận diện và tổ chức thuật ngữ tìm kiếm thông tin phù hợp với nhu cầu tin của bản thân
- Sử dụng từ khoá để tìm tin
- Biết cách sử dụng thuật ngữ tìm kiếm có kiểm soát để mở rộng hoặc thu hẹp kết quả tìm
- Nhận diện được những nguồn thông tin phù hợp với nhu cầu tin của bản thân
- Cung cấp các trích dẫn và danh mục tài liệu tham khảo khi trích dẫn tác phẩm của người khác
- Tuân thủ theo luật bản quyền và luật sở hữu trí tuệ khi sử dụng thông tin

Có ý kiến cho rằng, việc trang bị kiến thức thông tin cho học sinh là cần thiết để giúp các em đạt được thành công trong học tập.

- Theo quan điểm của Anh/Chị thì kiến thức thông tin quan trọng như thế nào?
- Anh/Chị nghĩ như thế nào về ý kiến trên?

5. Anh/Chị vui lòng cho biết, kiến thức thông tin hỗ trợ như thế nào cho hoạt động giảng dạy môn học của Anh/Chị?
6. Anh/Chị vui lòng cho biết, Anh/Chị đã làm gì để hỗ trợ cho việc phát triển kiến thức thông tin của học sinh?
7. Những thành phần/kỹ năng/vấn đề nào liên quan đến kiến thức thông tin được yêu cầu trong chương trình học, đặc biệt là trong môn học của Anh/Chị?

8. Kết quả khảo sát tại một số trường THPT tại Việt Nam cho thấy rằng đa số học sinh Việt Nam chỉ đạt điểm trung bình về kiến thức thông tin. Cụ thể, điểm số của các em đạt được từ 12 cho đến 84 trong tổng số 100, với điểm trung bình là 46.43/100. Ngoài ra, 82% đạt điểm trung bình (≥30 và <70), 13.7% đạt điểm thấp (<30), và chỉ có 4.4% đạt điểm cao (≥70). Anh/Chị nghĩ gì về kết quả này?
9. Kết quả từ một cuộc khảo sát gần đây cũng cho thấy rằng học sinh Việt Nam đạt điểm tốt hơn trong việc tìm kiếm thông tin và sử dụng thông tin nhưng lại yếu trong việc đánh giá nguồn tin. Anh/Chị nghĩ gì về kết quả này?
10. Kết quả khảo sát chỉ ra rằng, học sinh tại các trường công lập có trình độ kiến thức thông tin tốt hơn so với các trường dân lập. Anh/Chị nghĩ gì về kết quả này?
11. Kết quả khảo sát chỉ ra rằng, học sinh quen với việc sử dụng các công cụ tìm kiếm trực tuyến (online), ví dụ như Google hơn là các công cụ khác như sách, báo, tạp chí… Anh/Chị nghĩ gì về kết quả này?
12. Kết quả khảo sát chỉ ra rằng, học sinh khối 12 có điểm số về kiến thức thông tin cao hơn khối 10 và 11. Tuy nhiên, khối 11 lại có điểm số kiến thức thông tin thấp hơn so với khối 10. Anh/Chị nghĩ gì về kết quả này?
13. Kết quả khảo sát chỉ ra rằng, hầu hết học sinh tự đánh giá khả năng tìm kiếm, đánh giá và sử dụng thông tin của mình ở mức trung bình hoặc tốt. Tuy nhiên, các em lại đánh giá thấp khả năng sử dụng ngoại ngữ để tương tác với thông tin của mình? Anh/Chị nghĩ gì về kết quả này?
14. Kết quả phỏng vấn học sinh cho thấy rằng, nhà trường vẫn chưa có một chương trình giảng dạy chính thức về kiến thức thông tin cho học sinh. Tuy nhiên, một vài chỉ dẫn mang tính chất cá nhân từ giáo viên khi cho học sinh làm các dự án có thể giúp các em phát triển về kiến thức thông tin. Anh/Chị nghĩ gì về kết quả này?
15. Nếu nhà trường đưa ra một chương trình giảng dạy về kiến thức thông tin, Anh/Chị mong chờ điều gì ở chương trình này?
16. Anh/Chị vui lòng cung cấp các đề xuất cho nhà trường để phát triển kiến thức thông tin cho học sinh?
17. Anh/Chị vui lòng cho biết, Anh/Chị còn bất kỳ điều gì muốn chia sẻ về kiến thức thông tin mà vẫn chưa được đề cập đến trong bài phỏng vấn không?

Chân thành cảm ơn Anh/Chị

Appendix 29. Main interview questions for administrators – English version

1. Have you heard or read about information literacy?
2. Where did you hear or read about it?
3. The term "information literacy" will be fully explained below. However, before reading the explanation, in your opinion, what does information literacy mean?
4. Information literacy could be defined as follows: "Information Literacy is the ability to identify what information is needed, understand how the information is organized, identify the best sources of information for a given need, locate those sources, evaluate the sources critically, and share that information. It is the knowledge commonly used research techniques" (AASL).

   For example:

   - Identifying and organising suitable terms related to information needs
   - Using keyword to find information
   - Using controlled vocabulary and sources to broaden and narrow a search
   - Identifying sources related to information needs
   - Referencing and citation and the ethical and legal issues surrounding effective use of information

   It is recommended that, in order to achieve academic success, it is necessary to equip students with information literacy.

   - How is information literacy important?
   - What are your thoughts on this?
5. What has your school done to support the development of students' information literacy?
6. The survey found that students' information literacy scores ranged from 12 to 84 out of 100, with a mean score at 46.43/100. 82% of the students achieved average scores (≥30 and <70), 13.7% of them obtained low scores (<30) and only 4.4% of them had high score performance (≥70). What are your thoughts on this result?
7. The survey found that, out of the four IL testing areas, the best scored aspect was using information ethically (mean score: 60.11). Meanwhile, the least scored side was evaluating information sources (mean score: 38.36). The performing mean scores of the ability to develop search strategies and use English to engage with information effectively were 43.28 and 49.40, correspondingly. This indicates that students were

better in finding and using information than evaluating sources. What are your thoughts on this result?

8. The survey found that public school students had better information literacy performance than private school students. What are your thoughts on this result?
9. The survey found that students were familiar with online search engines, especially Google, than others. What are your thoughts on this result?
10. The survey found that Grade 12 students had higher scores in information literacy and almost all IL testing aspects than the two other grades. However, although Grade 11 students are at higher academic level, they had lower scores in overall information literacy and almost all information literacy testing aspects than Grade 10 students. What are your thoughts on this result?
11. The survey found that students rated their ability of information literacy and almost information literacy aspects, except using English to engage with information effectively, at an average and high level. What are your thoughts on this result?
12. The student interviews found that there was no formal information literacy programmes in the schools. However, some individual instructions from teachers that were provided when students conducted project work might help students develop information literacy. What are your thoughts on this result?
13. If the school delivers an information literacy programme, what do you expect to see in the programme?
14. From the viewpoint of an administrator, could you please tell me what factors affect the development of Vietnamese upper secondary students' information literacy?
15. Could you please give any suggestions to your school which will help your students develop their information literacy?
16. Is there anything else you would like to share about information literacy not already covered here?

If you do not have anything else to mention, we can conclude the interview. Thank you very much indeed for your time and thoughtful answers.

Appendix 30. Main interview question for administrators – Vietnamese version

1. Thầy/Cô vui lòng cho biết, Thầy/Cô đã bao giờ đọc hoặc nghe nói về khái niệm "Kiến thức thông tin" (trong tiếng Anh là Information Literacy) chưa?
2. Nếu đã từng nghe hoặc đọc về khái niệm "Kiến thức thông tin" (Information literacy), Thầy/Cô vui lòng cho biết Thầy/Cô đã nghe đến khái niệm này ở đâu?
3. Khái niệm Kiến thức thông tin sẽ được giải thích đầy đủ trong phần sau. Tuy nhiên, trước khi được giải thích, Thầy/Cô đã từng nghĩ kiến thức thông tin là gì?
4. Khái niệm "Kiến thức thông tin" được định nghĩa như sau:

"Kiến thức thông tin là khả năng nhận biết được mình cần thông tin gì, hiểu được thông tin được tổ chức như thế nào, nhận biết được những nguồn thông tin phù hợp với nhu cầu của mình, xác định được những nguồn thông tin đó, đánh giá những nguồn tin một cách thận trọng, và chia sẻ thông tin" (AASL).

Ví dụ:

- Nhận diện và tổ chức thuật ngữ tìm kiếm thông tin phù hợp với nhu cầu tin của bản thân
- Sử dụng từ khoá để tìm tin
- Biết cách sử dụng thuật ngữ tìm kiếm có kiểm soát để mở rộng hoặc thu hẹp kết quả tìm
- Nhận diện được những nguồn thông tin phù hợp với nhu cầu tin của bản thân
- Cung cấp các trích dẫn và danh mục tài liệu tham khảo khi trích dẫn tác phẩm của người khác
- Tuân thủ theo luật bản quyền và luật sở hữu trí tuệ khi sử dụng thông tin

Có ý kiến cho rằng, việc trang bị kiến thức thông tin cho học sinh là cần thiết để giúp các em đạt được thành công trong học tập.

- Theo quan điểm của Thầy/Cô thì kiến thức thông tin quan trọng như thế nào?
- Thầy/Cô nghĩ như thế nào về ý kiến trên?

5. Thầy/Cô vui lòng cho biết, Trường của Thầy/Cô đã làm gì để hỗ trợ học sinh trong việc phát triển kiến thức thông tin?
6. Kết quả khảo sát tại một số trường THPT tại Việt Nam cho thấy rằng đa số học sinh Việt Nam chỉ đạt điểm trung bình về kiến thức thông tin. Cụ thể, điểm số của các em đạt được từ 12 cho đến 84 trong tổng số 100, với điểm trung bình là 46.43/100. Ngoài

ra, 82% đạt điểm trung bình (≥30 và <70), 13.7% đạt điểm thấp (<30), và chỉ có 4.4% đạt điểm cao (≥70). Thầy/Cô nghĩ gì về kết quả này?

7. Kết quả từ một cuộc khảo sát gần đây cũng cho thấy rằng học sinh Việt Nam đạt điểm tốt hơn trong việc tìm kiếm thông tin và sử dụng thông tin nhưng lại yếu trong việc đánh giá nguồn tin. Thầy/Cô nghĩ gì về kết quả này?
8. Kết quả khảo sát chỉ ra rằng, học sinh tại các trường công lập có trình độ kiến thức thông tin tốt hơn so với các trường dân lập. Thầy/Cô nghĩ gì về kết quả này?
9. Kết quả kháo sát chỉ ra rằng, học sinh quen với việc sử dụng các công cụ tìm kiếm trực tuyến (online), ví dụ như Google hơn là các công cụ khác như sách, báo, tạp chí… Thầy/Cô nghĩ gì về kết quả này?
10. Kết quả khảo sát chỉ ra rằng, học sinh khối 12 có điểm số về kiến thức thông tin cao hơn khối 10 và 11. Tuy nhiên, khối 11 lại có điểm số kiến thức thông tin thấp hơn so với khối 10. Thầy/Cô nghĩ gì về kết quả này?
11. Kết quả khảo sát chỉ ra rằng, hầu hết học sinh tự đánh giá khả năng tìm kiếm, đánh giá và sử dụng thông tin của mình ở mức trung bình hoặc tốt. Tuy nhiên, các em lại đánh giá thấp khả năng sử dụng ngoại ngữ để tương tác với thông tin của mình? Thầy/Cô nghĩ gì về kết quả này?
12. Kết quả khảo sát cho thấy rằng, nhà trường vẫn chưa có một chương trình giảng dạy chính thức về kiến thức thông tin cho học sinh. Tuy nhiên, một vài chỉ dẫn mang tính chất cá nhân từ giáo viên khi các cho học sinh làm các dự án có thể giúp các em phát triển về kiến thức thông tin. Thầy/Cô nghĩ gì về kết quả này?
13. Nếu nhà trường đưa ra một chương trình giảng dạy về kiến thức thông tin, Thầy/Cô mong chờ điều gì ở chương trình này?
14. Với quan điểm của một người làm công tác quản lý, Thầy/Cô vui lòng cho biết những yếu tố nào ảnh hưởng đến việc phát triển kiến thức thông tin cho học sinh trung học phổ thông tại Việt Nam?
15. Thầy/Cô vui lòng cung cấp các đề xuất cho các trường THPT tại Việt Nam để phát triển kiến thức thông tin cho học sinh?
16. Thầy/Cô vui lòng cho biết, Thầy/Cô còn bất kỳ điều gì muốn chia sẻ về kiến thức thông tin mà vẫn chưa được đề cập đến trong bài phỏng vấn không?

Chân thành cảm ơn Thầy/Cô

Appendix 31. Main interview questions for librarians – English version

1. Have you heard or read about information literacy?
2. Where did you hear or read about it?
3. The term "information literacy" will be fully explained below. However, before reading the explanation, in your opinion, what does information literacy mean?
4. Information literacy could be defined as follows: "Information Literacy is the ability to identify what information is needed, understand how the information is organized, identify the best sources of information for a given need, locate those sources, evaluate the sources critically, and share that information. It is the knowledge commonly used in research techniques" (AASL).

   For example:

   - Identifying and organising suitable terms related to information needs
   - Using keyword to find information
   - Using controlled vocabulary and sources to broaden and narrow a search
   - Identifying sources related to information needs
   - Referencing and citation and the ethical and legal issues surrounding effective use of information

   It is recommended that, in order to achieve academic success, it is necessary to equip students with information literacy.

   - How is information literacy important?
   - What are your thoughts about this?
5. What has your library done to support the development of students' information literacy?
6. The survey found that students' information literacy scores ranged from 12 to 84 out of 100, with a mean score at 46.43/100. 82% of students achieved average scores (≥30 and <70), 13.7% of them obtained low scores (<30) and only 4.4% of them had high score performance (≥70). What are your thoughts on this result?
7. The survey found that, out of the four IL testing areas, the best scored aspect was using information ethically (mean score: 60.11). Meanwhile, the least scored side was evaluating information sources (mean score: 38.36). The performing mean scores of the ability to develop search strategies and use English to engage with information effectively were 43.28 and 49.40, correspondingly. This indicates that students were

better at finding and using information than evaluating sources. What are your thoughts on this result?

8. The survey found that public school students had better information literacy performance than private school students. What are your thoughts on this result?
9. The survey found that students were familiar with online search engines, especially Google, than others. What are your thoughts on this result?
10. The survey found that Grade 12 students had higher scores in overall information literacy and almost all IL testing aspects than the two other grades. However, although Grade 11 students are at higher academic level, they had lower scores in overall information literacy and almost all information literacy testing aspects than Grade 10 students. What are your thoughts on this result?
11. The survey found that students rated their ability of information literacy and almost all information literacy aspects, except using English to engage with information effectively, at an average and high level. What are your thoughts on this result?
12. The student interviews found that there was no formal information literacy programmes in the schools. However, some individual instructions from teachers that were provided when students conducted project work, might help students develop information literacy. What are your thoughts on this result?
13. The student interviews found that some students thought that your library did not have activities to support students in developing information literacy. What are your thoughts on this result?
14. The student interviews found that some students never used the library so they did not know how the library could help them develop their information literacy. What are your thoughts on this result?
15. If the school delivers an information literacy programme, what do you expect to see in the programme?
16. Could you please give any suggestions to your school which will help your students develop information literacy?
17. Is there anything else you would like to share about information literacy not already covered here?

If you do not have anything else to mention, we can conclude the interview. Thank you very much indeed for your time and thoughtful answers.

Appendix 32. Main interview questions for librarians – Vietnamese version

1. Anh/Chị vui lòng cho biết, Anh/Chị đã bao giờ đọc hoặc nghe nói về khái niệm "Kiến thức thông tin" (trong tiếng Anh là Information Literacy) chưa?
2. Nếu đã từng nghe hoặc đọc về khái niệm "Kiến thức thông tin" (Information literacy), Anh/Chị vui lòng cho biết Anh/Chị đã nghe đến khái niệm này ở đâu?
3. Khái niệm Kiến thức thông tin sẽ được giải thích đầy đủ trong phần sau. Tuy nhiên, trước khi được giải thích, Anh/Chị đã từng nghĩ kiến thức thông tin là gì?
4. Khái niệm "Kiến thức thông tin" được định nghĩa như sau:

"Kiến thức thông tin là khả năng nhận biết được mình cần thông tin gì, hiểu được thông tin được tổ chức như thế nào, nhận biết được những nguồn thông tin phù hợp với nhu cầu của mình, xác định được những nguồn thông tin đó, đánh giá những nguồn tin một cách thận trọng, và chia sẻ thông tin" (AASL).

Ví dụ:

- Nhận diện và tổ chức thuật ngữ tìm kiếm thông tin phù hợp với nhu cầu tin của bản thân
- Sử dụng từ khoá để tìm tin
- Biết cách sử dụng thuật ngữ tìm kiếm có kiểm soát để mở rộng hoặc thu hẹp kết quả tìm
- Nhận diện được những nguồn thông tin phù hợp với nhu cầu tin của bản thân
- Cung cấp các trích dẫn và danh mục tài liệu tham khảo khi trích dẫn tác phẩm của người khác
- Tuân thủ theo luật bản quyền và luật sở hữu trí tuệ khi sử dụng thông tin

Có ý kiến cho rằng, việc trang bị kiến thức thông tin cho học sinh là cần thiết để giúp các em đạt được thành công trong học tập.

- Theo quan điểm của Anh/Chị thì kiến thức thông tin quan trọng như thế nào?
- Anh/Chị nghĩ như thế nào về ý kiến trên?

5. Anh/Chị vui lòng cho biết, Thư viện của Anh/Chị đã làm gì để hỗ trợ học sinh trong việc phát triển kiến thức thông tin?
6. Kết quả khảo sát tại một số trường THPT tại Việt Nam cho thấy rằng đa số học sinh Việt Nam chỉ đạt điểm trung bình về kiến thức thông tin. Cụ thể, điểm số của các em đạt được từ 12 cho đến 84 trong tổng số 100, với điểm trung bình là 46.43/100. Ngoài

ra, 82% đạt điểm trung bình (≥30 và <70), 13.7% đạt điểm thấp (<30), và chỉ có 4.4% đạt điểm cao (≥70). Anh/Chị nghĩ gì về kết quả này?

7. Kết quả từ một cuộc khảo sát gần đây cũng cho thấy rằng học sinh Việt Nam đạt điểm tốt hơn trong việc tìm kiếm thông tin và sử dụng thông tin nhưng lại yếu trong việc đánh giá nguồn tin. Anh/Chị nghĩ gì về kết quả này?
8. Kết quả khảo sát chỉ ra rằng, học sinh tại các trường công lập có trình độ kiến thức thông tin tốt hơn so với các trường dân lập. Anh/Chị nghĩ gì về kết quả này?
9. Kết quả kháo sát chỉ ra rằng, học sinh quen với việc sử dụng các công cụ tìm kiếm trực tuyến (online), ví dụ như Google hơn là các công cụ khác như sách, báo, tạp chí… Anh/Chị nghĩ gì về kết quả này?
10. Kết quả khảo sát chỉ ra rằng, học sinh khối 12 có điểm số về kiến thức thông tin cao hơn khối 10 và 11. Tuy nhiên, khối 11 lại có điểm số kiến thức thông tin thấp hơn so với khối 10. Anh/Chị nghĩ gì về kết quả này?
11. Kết quả khảo sát chỉ ra rằng, hầu hết học sinh tự đánh giá khả năng tìm kiếm, đánh giá và sử dụng thông tin của mình ở mức trung bình hoặc tốt. Tuy nhiên, các em lại đánh giá thấp khả năng sử dụng ngoại ngữ để tương tác với thông tin của mình? Anh/Chị nghĩ gì về kết quả này?
12. Kết quả phỏng vấn học sinh cho thấy rằng, nhà trường vẫn chưa có một chương trình giảng dạy chính thức về kiến thức thông tin cho học sinh. Tuy nhiên, một vài chỉ dẫn mang tính chất cá nhân từ giáo viên khi cho học sinh làm các dự án có thể giúp các em phát triển về kiến thức thông tin. Anh/Chị nghĩ gì về kết quả này?
13. Kết quả của phỏng vấn học sinh cho thấy rằng, một số học sinh nghĩ rằng thư viện của Anh/Chị chưa có các hoạt động để hỗ trợ học sinh trong việc phát triển kiến thức thông tin. Anh/Chị nghĩ gì về kết quả này?
14. Một số học sinh chưa bao giờ sử dụng thư viện nên các em không chắc là thư viện có thể giúp các em phát triển kiến thức thông tin hay không. Anh/Chị nghĩ gì về kết quả này?
15. Nếu nhà trường đưa ra một chương trình giảng dạy về kiến thức thông tin, Anh/Chị mong chờ điều gì ở chương trình này?
16. Anh/Chị vui lòng cung cấp các đề xuất cho nhà trường để phát triển kiến thức thông tin cho học sinh?
17. Anh/Chị vui lòng cho biết, Anh/Chị còn bất kỳ điều gì muốn chia sẻ về kiến thức thông tin mà vẫn chưa được đề cập đến trong bài phỏng vấn không?

Chân thành cảm ơn Anh/Chị

Appendix 33. Main document review schedule – English version

1. Educational Development Strategy for the period 2010-2020

2. Guidance on the Implementation of Secondary Education Tasks in the Academic Year 2014-2015

3. Reports (school and library)

4. Library statistics
   - Library collection
     - The number of library collection
     - Print source (quantity, catalogue)
   - Search facilities
     - Library catalogue (card and online)
     - Database

5. Documents in relation to IL initiatives of two schools (if any)
   - Guidelines
   - Policy
   - Posters
   - Programmes

6. Teacher's resources
   - Lesson plan
   - Study programme

7. Textbooks (two subjects)
   - Student textbook
     + Literature: 3 books
     + Computer science: 3 books
   - Teacher textbook
     + Literature: 3 books
     + Computer science: 3 books

Appendix 34. Main document review schedule – Vietnamese version

1. Chiến lược giáo dục 2010-2020

2. Hướng dẫn triển khai các nhiệm vụ giáo dục năm học 2014-2015

3. Báo cáo của thư viện và trường học

4. Số liệu thống kê của thư viện
   - Bộ sưu tập của thư viện
     - Số lượng bộ sưu tập của thư viện
     - Nguồn tài liệu in (số lượng, danh mục tài liệu thư viện)
   - Chính sách tìm kiếm tài liệu của thư viện
     - Mục lục thư viện (Phiếu và trực tuyến)
     - Cơ sở dữ liệu

5. Các tài liệu, dự án…liên quan đến hoạt động hỗ trợ học sinh trong việc tìm kiếm, đánh giá và sử dụng thông tin hoặc phát triển kỹ năng thông tin
   - Hướng dẫn
   - Chính sách
   - Posters
   - Chương trình

6. Nguồn tài liệu dành cho giáo viên
   - Kế hoạch giảng dạy
   - Chương trình giảng dạy

7. Sách giáo khoa (2 môn)
   - Sách giáo khoa dành cho học sinh
     + Văn học: 3 quyển
     + Tin học: 3 quyển
   - Sách giáo khoa dành cho giáo viên
     + Văn học: 3 quyển
     + Tin học: 3 quyển

Appendix 35. Question scheme for the main questionnaire

Category	Question
DEMOGRAPHIC DATA	
Name	Q1
School	Q2
Gender	Q3
Level of study	Q4
AWARENESS OF THE CONCEPT	
Awareness and perception of the IL concept	Q5
IL TEST	
Testing two IL standards - Inquire, think critically, and gain knowledge - Use foreign language to engage with information effectively	Q6-Q30
SELF-RATING	
Self-rating – developing search strategies	Q31
Self-rating – evaluating information sources	Q32
Self-rating – using information ethically	Q33
Self-rating – using English to engage with information effectively	Q34
IL self-assessment	Q35

Appendix 36. Score scheme for the main questionnaire

Standards	Skills	Testing areas and indicators	Question	Answer					
				1	2	3	4	5	6
Standard 1	Developing search strategies	Call numbers (1.1.4)	Q6	0	0	1	0	0	N/A
		OPAC (1.1.1)	Q7	0	0	0	1	0	N/A
		Book table of contents (1.1.8)	Q8	0	1	0	0	0	N/A
		Book index (1.1.8)	Q9	0	1	0	0	0	N/A
		Boolean operators (1.1.8)	Q10	0	0	0	1	0	N/A
			Q11	0	1	0	0	0	N/A
		Truncation (1.1.8)	Q12	1	0	0	0	N/A	N/A
		Narrowing search results (1.1.8)	Q13	1	0	0	N/A	N/A	N/A
		Broadening search results (1.1.8)	Q14	1	0	0	0	N/A	N/A
		Search fields (1.1.1)	Q15	0	0	1	0	0	N/A
Standard 1	Evaluating information sources	Appropriate information sources (1.1.5)	Q16	0	1	0	0	0	N/A
			Q17	0	1	0	0	0	N/A
		Authoritative information sources (1.1.5)	Q18	0	0	0	1	0	N/A
			Q19	0	0	0	1	0	N/A
		Information content evaluation (1.1.7)	Q20	1	0	0	0	N/A	N/A
Standard 1	Using information ethically	Plagiarism (1.3.1)	Q21	0	1	0	0	N/A	N/A
		Copyright (1.3.1)	Q22	1	0	0	0	N/A	N/A
			Q23	0	1	0	0	0	N/A
		Ethical/legal	Q24	0	1	0	0	N/A	N/A

		guidelines and instructions (1.3.3)							
Standard 5	Using foreign language to engage with information effectively	Identifying important information from text files and documents written in English	Q25	0	1	0	0	0	0
		Understanding the meaning of a citation written in English	Q26	0	0	1	0	0	N/A
		Identifying appropriate search fields presented in English	Q27	0	1	0	0	N/A	N/A
		Understanding the meaning of the English book's title	Q28	1	0	0	N/A	N/A	N/A
		Evaluating the content of information written in English	Q29	1	0	0	0	0	N/A
		Understanding the message in relation to ethical issues written in English	Q30	0	0	0	1	0	N/A

Appendix 37. A sample of a translated student interview

STUDENT INTERVIEW - CS51

Interviewer: **Information literacy is defined as "the ability to identify what information is needed, understand how the information is organized, identify the best sources of information for a given need, locate those sources, evaluate the sources critically, and share that information. It is the knowledge commonly used research techniques" (AASL).**

For example:

- **Identifying and organising appropriate terms related to information needs**
- **Using keyword to find information**
- **Using controlled vocabulary and sources to broaden and narrow a search**
- **Identifying sources related to information needs**
- **Referencing and citation and the ethical and legal issues surrounding effective use of information**

Do you have any question regarding the definition and examples that I have mentioned?

Student: No, I can understand what you said

Interviewer: **It is recommended that, in order to achieve academic success, it is necessary to equip students with information literacy. In your opinion, how is information literacy important?**

Student: IL is very necessary because of the information explosion, online libraries and the large amount of information on the Internet. There is too much information, so we face many challenges in selecting appropriate information for use. There is information that we can find effortlessly, but it may be untrue or unreliable. Therefore, we need to have knowledge, we have to learn information literacy in order to search, evaluate and then use the information effectively.

Interviewer: **Do you mean information literacy is very important to students?**

Student: Yes, that is right

Interviewer: **What are your thoughts on the opinion that, in order to achieve academic success, it is necessary to equip students with information literacy**?

Student: I think that opinion is absolutely right

Interviewer: **Do you mean that the opinion is right?**

Student: Yes

Interviewer: **Can you please tell me more about why you think that the opinion is right?**

Student: What we learn from the school may not be sufficient...If we want to explore an issue in more depth, we have to search for more information through books, newspapers and social network sites. If we want to explore an issue in more depth, we have to use those sources. However, we also have to know how to select information. I think information literacy helps us gain a lot of knowledge, because we now give priority to developing our own understanding rather than gaining theoretical knowledge. For social science subjects, at present, there are many extra questions. Therefore, we have to use our own understanding. We have to learn how to know instead of using textbooks only.

Interviewer: **Can you please give me an example to demonstrate that searching for information from different sources is necessary as you said?**

Student: I love social science subjects, such as Literature, History and Geography. I often find information. For example, as for Literature, I sometimes have to do social discourse assignments. Therefore, I have to learn about what happens recently and breaking news. I have to search for information. There are many information sources that provide information about current events, but I am not sure which one is correct. Thus, I have to search for appropriate information. I then discuss with my friends. Another example is if I want to learn about history, I have to watch videos. It is easier to understand. For example, I can learn about diplomatic relations around the world by searching for information on the Internet. The school does not teach those things comprehensively.

Interviewer: **You have given examples related to social science subjects, so what are your thoughts on natural science subjects?**

Student: I learn many things in the school, but teaching methods may be inappropriate. Therefore, documents outside of the school may help me gain more knowledge. There are many online teachers who have more appropriate teaching methods.

Interviewer: What formal instructions (if any) have you received regarding information literacy or some aspects of information literacy, such as developing search strategies, evaluating information sources, using information ethically and using English to engage with information effectively?

Student: No, I have not been taught anything related to information literacy. As for copyright laws, I know them when I read about them in newspapers, but I do not know them in detail.

Interviewer: Do you mean that you have not received instructions regarding information search, information evaluation and information use?

Student: Yes

Interviewer: Can you please tell me, in your opinion, why is there no information literacy instructions for you?

Student: I think the study schedule is burdensome. We do not have time to learn about anything like that. We mainly find information by ourselves or ask older people, brothers or sisters.

Interviewer: Do you mean that your study timetable is too busy so that the school cannot deliver instructions related to information literacy?

Student: Yes

Interviewer: In your opinion, are there any other reasons leading to the above problem?

Student: I think teachers may not have sufficient knowledge or …something…of information literacy to teach us.

Interviewer: Do you mean that your teachers may not have sufficient knowledge to teach you information literacy?

Student: Yes

Interviewer: Can you please tell me without instructions, how do you find, evaluate and use information?

Student: I often watch news on television and listen to the radio. I love to listen to the radio. I always listen to the radio at 6am every day. Information from

this source is more accurate and reliable, and I also read several online newspapers, such as Tuoi Tre and Dan Tri. I search for information in different sources and then discuss with my friends to find which is the most appropriate. I often ask my teachers. They can give me advice.

Interviewer: **Do you mean that you find information through media channels, friends and then teachers?**

Student: Yes, because asking friends is easier

Interviewer: **From what you have been taught from your school, what would help you develop your information literacy?**

Student: I can develop my information literacy through homework.

Interviewer: **Can you please tell me how your homework help you develop information literacy?**

Student: Take History exercises as an example, my teacher often asks me to watch some movies and find some more information in advance in order to prepare for the next class. Therefore, I have to search for information to meet the requirements of my teacher.

Interviewer: **Can you please tell me any other activity from your school that can help you develop information literacy?**

Student: I sometimes need to find information when I take part in activities of the Ho Chi Minh Communist Youth Union in my school or in social activities.

Interviewer: **Can you please tell me how the activities of the Ho Chi Minh Communist Youth Union or social activities help you develop information literacy?**

Student: I can find information on the Internet. It can teach me something.

Interviewer: **What instructions regarding information literacy have you received from the Ho Chi Minh Communist Youth Union's activities or social activities?**

Student: The Ho Chi Minh Communist Youth Union provides us with many skills, such as communication, games, songs and presentation. If I want to practice and prepare well, I have to search for information on the Internet.

Interviewer: **Do you mean that you need to find information on the Internet to prepare for activities that are provided by the Union?**

Student: Yes

Interviewer: **How about your school library, how does your school library help you develop information literacy?**

Student: Regarding the library, I sometimes read books in the library. My school library classifies books based on subjects, so I can find information for my subjects easily. For example, I took part in the Literature Olympic Contest. So, I borrowed some of the many books in the library, and I also searched for more information on the Internet using the library computer.

Interviewer: **Can you please tell me what instructions regarding information literacy you have received from your school library?**

Student: I primarily learn it by myself.

Interviewer: **Do you mean that the library does not provide you instructions regarding information literacy?**

Student: Yes

Interviewer: **What else would help you to develop your information literacy outside your school?**

Student: No, I learn it by myself, because I want to have a more in-depth understanding of issues.

Interviewer: **Do you mean that you teach yourself, because there are no instructions regarding information literacy outside the school?**

Student: Yes

Interviewer: **Can you please tell me how you learn by yourself?**

Student: I primarily find information through social network. When I access the Internet, I often look for the latest breaking news on Tuoi Tre and Dan Tri. I often pay attention to information related to education and criminal issues. I also participate in social activities, but none of them give me instructions related to information literacy. For example, I attended the Internet Festival in Tay Ninh. However, it mainly refurbished a district library and provided some more computers to the library.

Interviewer: **Could you please give any suggestions to your school which will help you develop your information literacy?**

Student: I think that I need the support from the school. I sometimes want to find information, but there is too much information. I do not know which one is correct and how to search for information effectively. I do not have those skills. My friends primarily search for information via Google. I also do

not know how to use available information. I think that the school should provide an information literacy programme to help students know how to find information on the Internet.

Interviewer: **You suggest that the school should provide an information literacy programme, so could you please give any suggestions to your school which will help them deliver an information literacy programme effectively?**

Student: I think the class head teacher and computing subject teacher can discuss with us about information literacy. However, I think teachers are busy with their lesson plan. They do not have much time to teach us something like information literacy…I think the school head teacher has the ability to persuade students. He can discuss with us.

Interviewer: **Do you mean that teachers, especially the class head teacher and computing subject teacher, should take responsibility for delivering information literacy instructions?**

Student: Yes, and I think that inviting experts is necessary, because they have much knowledge about it.

Interviewer: **Do you have any other suggestions?**

Student: And because my study schedule is too busy, information literacy instructions can be integrated into self-study hours. I think that information literacy theory should be taught together with practice. We should not mainly focus on theory. I hope that the school will give students more opportunities to practice information literacy.

Interviewer: **Is there anything else you would like to share about information literacy not already covered here?**

Student: I think we should have a more in-depth understanding of issues rather than memorising every word in textbooks, because that is just rote learning. We should employ a teaching method that focuses on mind mapping. This is being applied to us. Also, teachers should find relevant information or examples, and then integrate them into the lesson to help us have a more in-depth understanding of issues.

Interviewer: **You have mentioned the textbooks. How do you think about the textbooks which you are using?**

Student: The textbooks primarily provide questions related to the lesson. However, using the textbooks is not sufficient to explain and answer those questions. Thus, we have to ask teachers. I think this causes a little inconvenient. Furthermore, if I use the textbooks to prepare the lesson in advance at home, it will be not adequate. I have to use reference books.

Interviewer: You have mentioned teaching methods and rote learning. Can you please tell me how you think about it?

Student: I do not like the traditional teaching method. Even though it is a natural or social science subject, we still need to develop our own thinking.

Interviewer: How do you think about the current teaching method in your school?

Student: There is so much knowledge. We sometimes cannot remember what we have learnt. Sometimes I forget what I learnt in the last semester. In my school, we have an examination every month, but it mainly focuses on five main subjects. We have to remember what we have been taught. However, in practice, I do not remember what I learnt in the last semester.

Interviewer: Is there anything else you would like to share about information literacy?

Student: Information literacy is the capability of each individual, but we have to discuss and practice it, not just me, not just my friends, teachers also have to help us develop those skills in order to support our learning and work later. I think we need to implement many activities to improve our information literacy. Furthermore, I think students need to be assessed to know whether information literacy teaching is effective.

Interviewer: Do you mean it is necessary to combine theory and practice and then assess the results of the implementation of an information literacy programme?

Student: Yes, that is right

Interviewer: Is there anything else you would like to share about information literacy?

Student: I think teachers should not be strict in giving scores to students. Some teachers require us to do exercises, but they do not give scores for that. Therefore, students do not want to complete their tasks.

Interviewer: Do you mean that teachers should provide extra scores to encourage students to study and engage with information?

Student: Yes

Interviewer: Is there anything else you would like to share about information literacy?

Student: I think that students in different schools can discuss with each other about information literacy. The school should organise meetings to help students learn from each other.

Interviewer: Do you mean that schools should collaborate to each other to help students among schools learn from each other?

Student: Yes

Interviewer: Is there anything else you would like to share about information literacy?

Student: No

If you do not have anything else to mention, we can conclude the interview. Thank you very much indeed for your time and thoughtful answers.

Appendix 38. SPSS statistics results

1. Students' demographic data

FREQUENCIES VARIABLES=school
/ORDER=ANALYSIS.

Frequencies

Statistics

school

N	Valid	183
	Missing	0

school

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	school B	92	50.3	50.3	50.3
	school C	91	49.7	49.7	100.0
	Total	183	100.0	100.0	

FREQUENCIES VARIABLES=gender
/ORDER=ANALYSIS.

Frequencies

Statistics

gender

N	Valid	183
	Missing	0

gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	female	99	54.1	54.1	54.1
	male	84	45.9	45.9	100.0
	Total	183	100.0	100.0	

FREQUENCIES VARIABLES=level
/ORDER=ANALYSIS.

Frequencies

Statistics

level of study

N	Valid	183
	Missing	0

level of study

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10	63	34.4	34.4	34.4
	11	55	30.1	30.1	64.5
	12	65	35.5	35.5	100.0
	Total	183	100.0	100.0	

2. Overall information literacy scores

```
FREQUENCIES VARIABLES=score_overall
  /STATISTICS=STDDEV MINIMUM MAXIMUM MEAN
  /ORDER=ANALYSIS.
```

Frequencies

Statistics

overall information literacy scores

N	Valid	183
	Missing	0
Mean		46.43
Std. Deviation		15.013
Minimum		12
Maximum		84

overall information literacy scores

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	12	3	1.6	1.6	1.6
	16	4	2.2	2.2	3.8
	20	9	4.9	4.9	8.7
	24	2	1.1	1.1	9.8
	28	7	3.8	3.8	13.7
	32	12	6.6	6.6	20.2
	36	13	7.1	7.1	27.3
	40	17	9.3	9.3	36.6
	44	19	10.4	10.4	47.0
	48	20	10.9	10.9	57.9
	52	17	9.3	9.3	67.2
	56	24	13.1	13.1	80.3
	60	7	3.8	3.8	84.2
	64	9	4.9	4.9	89.1
	68	12	6.6	6.6	95.6
	72	5	2.7	2.7	98.4
	80	2	1.1	1.1	99.5
	84	1	.5	.5	100.0
	Total	183	100.0	100.0	

3. Information literacy scores between schools

```
MEANS TABLES=score_overall BY school
  /CELLS=MEAN COUNT STDDEV.
```

Means

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
overall information literacy scores * school	183	100.0%	0	0.0%	183	100.0%

Report

overall information literacy scores

school	Mean	N	Std. Deviation
school B	52.61	92	13.574
school C	40.18	91	13.817
Total	46.43	183	15.013

```
CROSSTABS
  /TABLES=School BY score_overall_coded
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT EXPECTED
  /COUNT ROUND CELL.
```

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
school * coded overall information literacy scores	183	100.0%	0	0.0%	183	100.0%

school * coded overall information literacy scores Crosstabulation

			coded overall information literacy scores			
			low	average	high	Total
school	school B	Count	5	81	6	92
		Expected Count	12.6	72.4	7.0	92.0
	school C	Count	20	69	2	91
		Expected Count	12.4	77.6	1.0	91.0
Total		Count	25	150	8	183
		Expected Count	25.0	150.0	8.0	183.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.955[a]	2	.003
Likelihood Ratio	12.686	2	.002
Linear-by-Linear Association	11.539	1	.001
N of Valid Cases	183		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is .98.

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.256	.003
	Cramer's V	.256	.003
N of Valid Cases		183	

4. Information literacy component testing scores

FREQUENCIES VARIABLES=score_F_coded score_E_coded score_U_coded score_UE_coded
/ORDER=ANALYSIS.

Frequencies

Statistics

		coded scores of developing search strategies	coded scores of evaluating information sources	coded scores of using information ethically	coded scores of using English
N	Valid	183	183	183	183
	Missing	0	0	0	0

Frequency Table

coded scores of developing search strategies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	low	35	19.1	19.1	19.1
	average	120	65.6	65.6	84.7
	high	28	15.3	15.3	100.0
	Total	183	100.0	100.0	

coded scores of evaluating information sources

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	low	58	31.7	31.7	31.7
	average	113	61.7	61.7	93.4
	high	12	6.6	6.6	100.0
	Total	183	100.0	100.0	

coded scores of using information ethically

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	low	26	14.2	14.2	14.2
	average	71	38.8	38.8	53.0
	high	86	47.0	47.0	100.0
	Total	183	100.0	100.0	

coded scores of using English

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	low	37	20.2	20.2	20.2
	average	118	64.5	64.5	84.7
	high	28	15.3	15.3	100.0
	Total	183	100.0	100.0	

5. Information literacy scores between grades

```
MEANS TABLES=score_F score_E score_U score_UE BY level
  /CELLS=MEAN COUNT STDDEV.
```

Means

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
scores of developing search strategies * level of study	183	100.0%	0	0.0%	183	100.0%
scores of evaluating information sources * level of study	183	100.0%	0	0.0%	183	100.0%
scores of using information ethically * level of study	183	100.0%	0	0.0%	183	100.0%
scores of using English to engage with information effectively * level of study	183	100.0%	0	0.0%	183	100.0%

Level of study		scores of developing search strategies	scores of evaluating information sources	scores of using information ethically	scores of using English to engage with information effectively
10	Mean	41.59	41.59	54.37	47.43
	N	63	63	63	63
	Std. Deviation	18.246	20.416	25.217	25.432
11	Mean	38.18	32.36	62.73	47.29
	N	55	55	55	55
	Std. Deviation	21.950	21.599	22.501	25.382
12	Mean	49.23	40.31	63.46	53.09
	N	65	65	65	65
	Std. Deviation	19.946	20.153	20.289	23.679
Total	Mean	43.28	38.36	60.11	49.40
	N	183	183	183	183
	Std. Deviation	20.439	20.954	23.002	24.823

```
CROSSTABS
  /TABLES=score_F_coded BY level
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT EXPECTED
  /COUNT ROUND CELL.
```

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
coded scores of developing search strategies * level of study	183	100.0%	0	0.0%	183	100.0%

coded scores of developing search strategies * level of study Crosstabulation

			Level of study			
			10	11	12	Total
coded scores of developing search strategies	low	Count	12	14	9	35
		Expected Count	12.0	10.5	12.4	35.0
	average	Count	44	33	43	120
		Expected Count	41.3	36.1	42.6	120.0
	high	Count	7	8	13	28
		Expected Count	9.6	8.4	9.9	28.0
Total		Count	63	55	65	183
		Expected Count	63.0	55.0	65.0	183.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.220[a]	4	.377
Likelihood Ratio	4.209	4	.378
Linear-by-Linear Association	1.868	1	.172
N of Valid Cases	183		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.42.

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.152	.377
	Cramer's V	.107	.377
N of Valid Cases		183	

```
CROSSTABS
  /TABLES=score_E_coded BY level
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT EXPECTED
  /COUNT ROUND CELL.
```

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
coded scores of evaluating information sources * level of study	183	100.0%	0	0.0%	183	100.0%

coded scores of evaluating information sources * level of study Crosstabulation

			Level of study			
			10	11	12	Total
coded scores of evaluating information sources	low	Count	14	25	19	58
		Expected Count	20.0	17.4	20.6	58.0
	average	Count	45	27	41	113
		Expected Count	37.9	36.0	39.1	113.0
	high	Count	4	3	5	12
		Expected Count	5.1	1.6	5.3	12.0
Total		Count	63	55	65	183
		Expected Count	63.0	55.0	65.0	183.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.829[a]	4	.098
Likelihood Ratio	7.711	4	.103
Linear-by-Linear Association	.298	1	.585
N of Valid Cases	183		

a. 1 cells (11.1%) have expected count less than 5. The minimum expected count is 1.61.

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.207	.098
	Cramer's V	.146	.098
N of Valid Cases		183	

```
CROSSTABS
  /TABLES=score_U_coded BY level
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT EXPECTED
  /COUNT ROUND CELL.
```

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
coded scores of using information ethically * level of study	183	100.0%	0	0.0%	183	100.0%

coded scores of using information ethically * level of study Crosstabulation

			Level of study			
			10	11	12	Total
coded scores of using information ethically	low	Count	13	6	7	26
		Expected Count	9.0	7.8	9.2	26.0
	average	Count	25	24	22	71
		Expected Count	24.4	21.3	25.2	71.0
	high	Count	25	25	36	86
		Expected Count	29.6	25.8	30.5	86.0
Total		Count	63	55	65	183
		Expected Count	63.0	55.0	65.0	183.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.267[a]	4	.261
Likelihood Ratio	5.120	4	.275
Linear-by-Linear Association	4.115	1	.043
N of Valid Cases	183		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.81.

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.170	.261
	Cramer's V	.120	.261
N of Valid Cases		183	

```
CROSSTABS
  /TABLES=score_UE_coded BY level
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT EXPECTED
  /COUNT ROUND CELL.
```

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
coded scores of using English * level of study	183	100.0%	0	0.0%	183	100.0%

coded scores of using English * level of study Crosstabulation

			Level of study			
			10	11	12	Total
coded scores of using English	low	Count	15	12	10	37
		Expected Count	12.7	11.1	13.1	37.0
	average	Count	41	35	42	118
		Expected Count	40.6	35.5	41.9	118.0
	high	Count	7	8	13	28
		Expected Count	9.6	8.4	9.9	28.0
Total		Count	63	55	65	183
		Expected Count	63.0	55.0	65.0	183.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.914[a]	4	.572
Likelihood Ratio	2.952	4	.566
Linear-by-Linear Association	2.713	1	.100
N of Valid Cases	183		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.42.

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.126	.572
	Cramer's V	.089	.572
N of Valid Cases		183	

6. Comparison of information literacy levels between female and male students

```
MEANS TABLES=score_F score_E score_U score_UE score_overall BY gender
  /CELLS=MEAN COUNT STDDEV.
```

Means

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
scores of developing search strategies * gender	183	100.0%	0	0.0%	183	100.0%
scores of evaluating information sources * gender	183	100.0%	0	0.0%	183	100.0%
scores of using information ethically * gender	183	100.0%	0	0.0%	183	100.0%
scores of using English to engage with information effectively * gender	183	100.0%	0	0.0%	183	100.0%
Overall information literacy scores * gender	183	100.0%	0	0.0%	183	100.0%

Report

gender		scores of developing search strategies	scores of evaluating information sources	scores of using information ethically	scores of using English to engage with information effectively	Overall information literacy scores
female	Mean	44.44	38.99	63.89	50.73	47.92
	N	99	99	99	99	99
	Std. Deviation	20.164	21.261	21.196	24.016	14.274
male	Mean	41.90	37.62	55.65	47.83	44.67
	N	84	84	84	84	84
	Std. Deviation	20.796	20.688	24.344	25.799	15.743
Total	Mean	43.28	38.36	60.11	49.40	46.43
	N	183	183	183	183	183
	Std. Deviation	20.439	20.954	23.002	24.823	15.013

```
T-TEST GROUPS=Gender(0 1)
  /MISSING=ANALYSIS
  /VARIABLES=Score_Overall
  /CRITERIA=CI(.95).
```

T-Test

Group Statistics

	gender	N	Mean	Std. Deviation	Std. Error Mean
overall information literacy scores	female	99	47.92	14.274	1.435
	male	84	44.67	15.743	1.718

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
overall information literacy scores	Equal variances assumed	1.482	.225	1.465	181	.145
	Equal variances not assumed			1.453	169.378	.148

Independent Samples Test

		t-test for Equality of Means			
		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
				Lower	Upper
overall information literacy scores	Equal variances assumed	3.253	2.220	-1.128	7.633
	Equal variances not assumed	3.253	2.238	-1.165	7.670

```
T-TEST GROUPS=gender(0 1)
  /MISSING=ANALYSIS
  /VARIABLES=score_F score_E score_U score_UE
  /CRITERIA=CI(.95).
```

T-Test

Group Statistics

	gender	N	Mean	Std. Deviation	Std. Error Mean
scores of developing search strategies	female	99	44.44	20.164	2.027
	male	84	41.90	20.796	2.269
scores of evaluating information sources	female	99	38.99	21.261	2.137
	male	84	37.62	20.688	2.257
scores of using information ethically	female	99	63.89	21.196	2.130
	male	84	55.65	24.344	2.656
scores of using English to engage with information effectively	female	99	50.73	24.016	2.414
	male	84	47.83	25.799	2.815

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
scores of developing search strategies	Equal variances assumed	.226	.635	.837	181	.404
	Equal variances not assumed			.835	174.298	.405
scores of evaluating information sources	Equal variances assumed	.002	.968	.440	181	.660
	Equal variances not assumed			.441	177.611	.660
scores of using information ethically	Equal variances assumed	.278	.599	2.446	181	.015
	Equal variances not assumed			2.418	165.960	.017
scores of using English to engage with information effectively	Equal variances assumed	1.520	.219	.785	181	.433
	Equal variances not assumed			.780	171.429	.436

Independent Samples Test

		t-test for Equality of Means			
		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
				Lower	Upper
scores of developing search strategies	Equal variances assumed	2.540	3.035	-3.448	8.527
	Equal variances not assumed	2.540	3.042	-3.465	8.544
scores of evaluating information sources	Equal variances assumed	1.371	3.115	-4.776	7.518
	Equal variances not assumed	1.371	3.108	-4.763	7.505
scores of using information ethically	Equal variances assumed	8.234	3.366	1.592	14.877
	Equal variances not assumed	8.234	3.405	1.512	14.957
scores of using English to engage with information effectively	Equal variances assumed	2.894	3.686	-4.380	10.168
	Equal variances not assumed	2.894	3.708	-4.425	10.213

7. Information literacy self-assessment

FREQUENCIES VARIABLES=self_F_coded self_E_coded self_U_coded self_UE_coded self_IL_coded
/ORDER=ANALYSIS.

Frequencies

Statistics

		self-rated information search coded	self-rated information evaluation coded	self-rated information use coded	self-rated English use coded	self-rated information literacy level coded
N	Valid	183	183	183	183	183
	Missing	0	0	0	0	0

Frequency Table

self-rated information search coded

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	low	31	16.9	16.9	16.9
	average	88	48.1	48.1	65.0
	high	64	35.0	35.0	100.0
	Total	183	100.0	100.0	

self-rated information evaluation coded

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	low	44	24.0	24.0	24.0
	average	90	49.2	49.2	73.2
	high	49	26.8	26.8	100.0
	Total	183	100.0	100.0	

self-rated information use coded

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	low	31	16.9	16.9	16.9
	average	58	31.7	31.7	48.6
	high	94	51.4	51.4	100.0
	Total	183	100.0	100.0	

self-rated English use coded

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	low	80	43.7	43.7	43.7
	average	69	37.7	37.7	81.4
	high	34	18.6	18.6	100.0
	Total	183	100.0	100.0	

self-rated information literacy level coded

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	low	38	20.8	20.8	20.8
	average	96	52.5	52.5	73.2
	high	49	26.8	26.8	100.0
	Total	183	100.0	100.0	

8. Comparison of information literacy self-rating between female and male students

```
T-TEST GROUPS=gender(0 1)
  /MISSING=ANALYSIS
  /VARIABLES=self_IL
  /CRITERIA=CI(.95).
```

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
self-rated information literacy level	Equal variances assumed	4.937	.028	.305	181	.760
	Equal variances not assumed			.299	152.446	.766

Independent Samples Test

		t-test for Equality of Means			
		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
				Lower	Upper
self-rated information literacy level	Equal variances assumed	.041	.136	-.226	.309
	Equal variances not assumed	.041	.139	-.233	.316

9. Comparison of information literacy self-rating between grades

```
CROSSTABS
  /TABLES=level BY self_IL_coded
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT EXPECTED
  /COUNT ROUND CELL.
```

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
level of study * self-rated information literacy level coded	183	100.0%	0	0.0%	183	100.0%

level of study * self-rated information literacy level coded Crosstabulation

			self-rated information literacy level coded			Total
			low	average	high	
level of study	10	Count	21	33	9	63
		Expected Count	13.1	33.0	16.9	63.0
	11	Count	10	27	18	55
		Expected Count	11.4	28.9	14.7	55.0
	12	Count	7	36	22	65
		Expected Count	13.5	34.1	17.4	65.0
Total		Count	38	96	49	183
		Expected Count	38.0	96.0	49.0	183.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.934[a]	4	.008
Likelihood Ratio	14.482	4	.006
Linear-by-Linear Association	11.901	1	.001
N of Valid Cases	183		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 11.42.

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.276	.008
	Cramer's V	.195	.008
N of Valid Cases		183	

10. Comparison of information literacy self-rating between schools

```
CROSSTABS
  /TABLES=self_IL_coded BY school
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT EXPECTED
  /COUNT ROUND CELL.
```

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
self-rated information literacy level coded * school	183	100.0%	0	0.0%	183	100.0%

self-rated information literacy level coded * school Crosstabulation

			school		
			school B	school C	Total
self-rated information literacy level coded	low	Count	12	26	38
		Expected Count	19.1	18.9	38.0
	average	Count	54	42	96
		Expected Count	48.3	47.7	96.0
	high	Count	26	23	49
		Expected Count	24.6	24.4	49.0
Total		Count	92	91	183
		Expected Count	92.0	91.0	183.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.836[a]	2	.033
Likelihood Ratio	6.964	2	.031
Linear-by-Linear Association	3.306	1	.069
N of Valid Cases	183		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 18.90.

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.193	.033
	Cramer's V	.193	.033
N of Valid Cases		183	

11. Correlation between demographic variables and information literacy testing areas variables

```
CORRELATIONS
  /VARIABLES=school score_F score_E score_U score_UE score_Overall
  /PRINT=TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

Correlations

		school	scores of developing search strategies	scores of evaluating information sources	scores of using information ethically	scores of using English to engage with information effectively
school	Pearson Correlation	1	-.364**	-.361**	-.236**	-.144
	Sig. (2-tailed)		.000	.000	.001	.051
	N	183	183	183	183	183
scores of developing search strategies	Pearson Correlation	-.364**	1	.287**	.277**	.285**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	183	183	183	183	183
scores of evaluating information sources	Pearson Correlation	-.361**	.287**	1	.234**	.188*
	Sig. (2-tailed)	.000	.000		.001	.011
	N	183	183	183	183	183
scores of using information ethically	Pearson Correlation	-.236**	.277**	.234**	1	.267**
	Sig. (2-tailed)	.001	.000	.001		.000
	N	183	183	183	183	183
scores of using English to engage with information effectively	Pearson Correlation	-.144	.285**	.188*	.267**	1
	Sig. (2-tailed)	.051	.000	.011	.000	
	N	183	183	183	183	183
overall information literacy scores	Pearson Correlation	-.415**	.803**	.569**	.567**	.669**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	183	183	183	183	183

Correlations

		overall information literacy scores
school	Pearson Correlation	-.415**
	Sig. (2-tailed)	.000
	N	183
scores of developing search strategies	Pearson Correlation	.803**
	Sig. (2-tailed)	.000
	N	183
scores of evaluating information sources	Pearson Correlation	.569**
	Sig. (2-tailed)	.000
	N	183
scores of using information ethically	Pearson Correlation	.567**
	Sig. (2-tailed)	.000
	N	183
scores of using English to engage with information effectively	Pearson Correlation	.669**
	Sig. (2-tailed)	.000
	N	183
overall information literacy scores	Pearson Correlation	1
	Sig. (2-tailed)	
	N	183

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

```
CORRELATIONS
  /VARIABLES=gender score_F score_E score_U score_UE score_overall
  /PRINT=TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

Correlations

		gender	scores of developing search strategies	scores of evaluating information sources	scores of using information ethically	scores of using English to engage with information effectively
gender	Pearson Correlation	1	-.062	-.033	-.179*	-.058
	Sig. (2-tailed)		.404	.660	.015	.433
	N	183	183	183	183	183
scores of developing search strategies	Pearson Correlation	-.062	1	.287**	.277**	.285**
	Sig. (2-tailed)	.404		.000	.000	.000
	N	183	183	183	183	183
scores of evaluating information sources	Pearson Correlation	-.033	.287**	1	.234**	.188*
	Sig. (2-tailed)	.660	.000		.001	.011
	N	183	183	183	183	183
scores of using information ethically	Pearson Correlation	-.179*	.277**	.234**	1	.267**
	Sig. (2-tailed)	.015	.000	.001		.000
	N	183	183	183	183	183
scores of using English to engage with information effectively	Pearson Correlation	-.058	.285**	.188*	.267**	1
	Sig. (2-tailed)	.433	.000	.011	.000	
	N	183	183	183	183	183
overall information literacy scores	Pearson Correlation	-.108	.803**	.569**	.567**	.669**
	Sig. (2-tailed)	.145	.000	.000	.000	.000
	N	183	183	183	183	183

Correlations

		overall information literacy scores
gender	Pearson Correlation	-.108
	Sig. (2-tailed)	.145
	N	183
scores of developing search strategies	Pearson Correlation	.803**
	Sig. (2-tailed)	.000
	N	183
scores of evaluating information sources	Pearson Correlation	.569**
	Sig. (2-tailed)	.000
	N	183
scores of using information ethically	Pearson Correlation	.567**
	Sig. (2-tailed)	.000
	N	183
scores of using English to engage with information effectively	Pearson Correlation	.669**
	Sig. (2-tailed)	.000
	N	183
overall information literacy scores	Pearson Correlation	1
	Sig. (2-tailed)	
	N	183

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

```
CORRELATIONS
  /VARIABLES=level score_F score_E score_U score_UE score_overall
  /PRINT=TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

Correlations

		level of study	scores of developing search strategies	scores of evaluating information sources	scores of using information ethically	scores of using English to engage with information effectively
level of study	Pearson Correlation	1	.158*	-.024	.165*	.096
	Sig. (2-tailed)		.032	.747	.025	.195
	N	183	183	183	183	183
scores of developing search strategies	Pearson Correlation	.158*	1	.287**	.277**	.285**
	Sig. (2-tailed)	.032		.000	.000	.000
	N	183	183	183	183	183
scores of evaluating information sources	Pearson Correlation	-.024	.287**	1	.234**	.188*
	Sig. (2-tailed)	.747	.000		.001	.011
	N	183	183	183	183	183
scores of using information ethically	Pearson Correlation	.165*	.277**	.234**	1	.267**
	Sig. (2-tailed)	.025	.000	.001		.000
	N	183	183	183	183	183
scores of using English to engage with information effectively	Pearson Correlation	.096	.285**	.188*	.267**	1
	Sig. (2-tailed)	.195	.000	.011	.000	
	N	183	183	183	183	183
overall information literacy scores	Pearson Correlation	.157*	.803**	.569**	.567**	.669**
	Sig. (2-tailed)	.034	.000	.000	.000	.000
	N	183	183	183	183	183

Correlations

		overall information literacy scores
level of study	Pearson Correlation	.157*
	Sig. (2-tailed)	.034
	N	183
scores of developing search strategies	Pearson Correlation	.803**
	Sig. (2-tailed)	.000
	N	183
scores of evaluating information sources	Pearson Correlation	.569**
	Sig. (2-tailed)	.000
	N	183
scores of using information ethically	Pearson Correlation	.567**
	Sig. (2-tailed)	.000
	N	183
scores of using English to engage with information effectively	Pearson Correlation	.669**
	Sig. (2-tailed)	.000
	N	183
overall information literacy scores	Pearson Correlation	1
	Sig. (2-tailed)	
	N	183

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

12. Correlation between demographic variables and self-rating variables

```
CORRELATIONS
  /VARIABLES=school self_F self_E self_U self_UE self_IL
  /PRINT=TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

Correlations

		school	self-rated information search	self-rated source evaluation	self-rated information use	self-rated English use
school	Pearson Correlation	1	-.165*	-.172*	-.111	-.272**
	Sig. (2-tailed)		.025	.020	.134	.000
	N	183	183	183	183	183
self-rated information search	Pearson Correlation	-.165*	1	.532**	.226**	.262**
	Sig. (2-tailed)	.025		.000	.002	.000
	N	183	183	183	183	183
self-rated source evaluation	Pearson Correlation	-.172*	.532**	1	.302**	.430**
	Sig. (2-tailed)	.020	.000		.000	.000
	N	183	183	183	183	183
self-rated information use	Pearson Correlation	-.111	.226**	.302**	1	.274**
	Sig. (2-tailed)	.134	.002	.000		.000
	N	183	183	183	183	183
self-rated English use	Pearson Correlation	-.272**	.262**	.430**	.274**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	183	183	183	183	183
self-rated information literacy level	Pearson Correlation	-.114	.281**	.392**	.277**	.395**
	Sig. (2-tailed)	.126	.000	.000	.000	.000
	N	183	183	183	183	183

Correlations

		self-rated information literacy level
school	Pearson Correlation	-.114
	Sig. (2-tailed)	.126
	N	183
self-rated information search	Pearson Correlation	.281**
	Sig. (2-tailed)	.000
	N	183
self-rated source evaluation	Pearson Correlation	.392**
	Sig. (2-tailed)	.000
	N	183
self-rated information use	Pearson Correlation	.277**
	Sig. (2-tailed)	.000
	N	183
self-rated English use	Pearson Correlation	.395**
	Sig. (2-tailed)	.000
	N	183
self-rated information literacy level	Pearson Correlation	1
	Sig. (2-tailed)	
	N	183

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

```
CORRELATIONS
  /VARIABLES=gender self_F self_E self_U self_UE self_IL
  /PRINT=TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

Correlations

		gender	self-rated information search	self-rated source evaluation	self-rated information use	self-rated English use
gender	Pearson Correlation	1	-.015	-.007	-.094	.007
	Sig. (2-tailed)		.838	.926	.203	.927
	N	183	183	183	183	183
self-rated information search	Pearson Correlation	-.015	1	.532**	.226**	.262**
	Sig. (2-tailed)	.838		.000	.002	.000
	N	183	183	183	183	183
self-rated source evaluation	Pearson Correlation	-.007	.532**	1	.302**	.430**
	Sig. (2-tailed)	.926	.000		.000	.000
	N	183	183	183	183	183
self-rated information use	Pearson Correlation	-.094	.226**	.302**	1	.274**
	Sig. (2-tailed)	.203	.002	.000		.000
	N	183	183	183	183	183
self-rated English use	Pearson Correlation	.007	.262**	.430**	.274**	1
	Sig. (2-tailed)	.927	.000	.000	.000	
	N	183	183	183	183	183
self-rated information literacy level	Pearson Correlation	-.023	.281**	.392**	.277**	.395**
	Sig. (2-tailed)	.760	.000	.000	.000	.000
	N	183	183	183	183	183

Correlations

		self-rated information literacy level
gender	Pearson Correlation	-.023
	Sig. (2-tailed)	.760
	N	183
self-rated information search	Pearson Correlation	.281**
	Sig. (2-tailed)	.000
	N	183
self-rated source evaluation	Pearson Correlation	.392**
	Sig. (2-tailed)	.000
	N	183
self-rated information use	Pearson Correlation	.277**
	Sig. (2-tailed)	.000
	N	183
self-rated English use	Pearson Correlation	.395**
	Sig. (2-tailed)	.000
	N	183
self-rated information literacy level	Pearson Correlation	1
	Sig. (2-tailed)	
	N	183

**. Correlation is significant at the 0.01 level (2-tailed).

```
CORRELATIONS
  /VARIABLES=level self_F self_E self_U self_UE self_IL
  /PRINT=TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

Correlations

		level of study	self-rated information search	self-rated source evaluation	self-rated information use	self-rated English use
level of study	Pearson Correlation	1	.086	.053	.082	.120
	Sig. (2-tailed)		.247	.473	.267	.105
	N	183	183	183	183	183
self-rated information search	Pearson Correlation	.086	1	.532**	.226**	.262**
	Sig. (2-tailed)	.247		.000	.002	.000
	N	183	183	183	183	183
self-rated source evaluation	Pearson Correlation	.053	.532**	1	.302**	.430**
	Sig. (2-tailed)	.473	.000		.000	.000
	N	183	183	183	183	183
self-rated information use	Pearson Correlation	.082	.226**	.302**	1	.274**
	Sig. (2-tailed)	.267	.002	.000		.000
	N	183	183	183	183	183
self-rated English use	Pearson Correlation	.120	.262**	.430**	.274**	1
	Sig. (2-tailed)	.105	.000	.000	.000	
	N	183	183	183	183	183
self-rated information literacy level	Pearson Correlation	.271**	.281**	.392**	.277**	.395**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	183	183	183	183	183

Correlations

		self-rated information literacy level
level of study	Pearson Correlation	.271**
	Sig. (2-tailed)	.000
	N	183
self-rated information search	Pearson Correlation	.281**
	Sig. (2-tailed)	.000
	N	183
self-rated source evaluation	Pearson Correlation	.392**
	Sig. (2-tailed)	.000
	N	183
self-rated information use	Pearson Correlation	.277**
	Sig. (2-tailed)	.000
	N	183
self-rated English use	Pearson Correlation	.395**
	Sig. (2-tailed)	.000
	N	183
self-rated information literacy level	Pearson Correlation	1
	Sig. (2-tailed)	
	N	183

**. Correlation is significant at the 0.01 level (2-tailed).

13. Correlation among information literacy testing areas variables

```
CORRELATIONS
  /VARIABLES=score_F score_E score_U score_UE score_overall
  /PRINT=TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

Correlations

		scores of developing search strategies	scores of evaluating information sources	scores of using information ethically	scores of using English to engage with information effectively	scores of information literacy level
scores of developing search strategies	Pearson Correlation	1	.287**	.277**	.285**	.803**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	183	183	183	183	183
scores of evaluating information sources	Pearson Correlation	.287**	1	.234**	.188*	.569**
	Sig. (2-tailed)	.000		.001	.011	.000
	N	183	183	183	183	183
scores of using information ethically	Pearson Correlation	.277**	.234**	1	.267**	.567**
	Sig. (2-tailed)	.000	.001		.000	.000
	N	183	183	183	183	183
scores of using English to engage with information effectively	Pearson Correlation	.285**	.188*	.267**	1	.669**
	Sig. (2-tailed)	.000	.011	.000		.000
	N	183	183	183	183	183
scores of information literacy level	Pearson Correlation	.803**	.569**	.567**	.669**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	183	183	183	183	183

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

14. Correlation of information literacy scores and self-assessment

```
NONPAR CORR
  /VARIABLES=score_F score_E score_U score_UE score_overall self_F self_E self_U self_UE
self_IL
  /PRINT=SPEARMAN TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

Nonparametric Correlations

a. Based on availability of workspace memory

Correlations

			scores of developing search strategies	scores of evaluating information sources	scores of using information ethically	scores of using English to engage with information effectively
Spearman's rho	scores of developing search strategies	Correlation Coefficient	1.000	.265**	.274**	.277**
		Sig. (2-tailed)	.	.000	.000	.000
		N	183	183	183	183
	scores of evaluating information sources	Correlation Coefficient	.265**	1.000	.227**	.173*
		Sig. (2-tailed)	.000	.	.002	.019
		N	183	183	183	183
	scores of using information ethically	Correlation Coefficient	.274**	.227**	1.000	.272**
		Sig. (2-tailed)	.000	.002	.	.000
		N	183	183	183	183
	scores of using English to engage with information effectively	Correlation Coefficient	.277**	.173*	.272**	1.000
		Sig. (2-tailed)	.000	.019	.000	.
		N	183	183	183	183
	scores of information literacy level	Correlation Coefficient	.797**	.531**	.546**	.666**
		Sig. (2-tailed)	.000	.000	.000	.000
		N	183	183	183	183
	self-rated information search	Correlation Coefficient	.162*	-.100	.073	.080
		Sig. (2-tailed)	.028	.178	.325	.279
		N	183	183	183	183
	self-rated source evaluation	Correlation Coefficient	.096	-.048	.093	.051
		Sig. (2-tailed)	.198	.514	.211	.497
		N	183	183	183	183
	self-rated information	Correlation Coefficient	.052	.049	.163*	.206**

	use	Sig. (2-tailed)	.486	.507	.027	.005
		N	183	183	183	183
	self-rated English use	Correlation Coefficient	.147*	-.105	.009	.171*
		Sig. (2-tailed)	.047	.156	.900	.021
		N	183	183	183	183
	self-rated information literacy level	Correlation Coefficient	.117	-.044	.138	.260**
		Sig. (2-tailed)	.116	.550	.063	.000
		N	183	183	183	183

Correlations

			scores of information literacy level	self-rated information search	self-rated source evaluation	self-rated information use
Spearman's rho	scores of developing search strategies	Correlation Coefficient	.797**	.162*	.096	.052
		Sig. (2-tailed)	.000	.028	.198	.486
		N	183	183	183	183
	scores of evaluating information sources	Correlation Coefficient	.531**	-.100	-.048	.049
		Sig. (2-tailed)	.000	.178	.514	.507
		N	183	183	183	183
	scores of using information ethically	Correlation Coefficient	.546**	.073	.093	.163*
		Sig. (2-tailed)	.000	.325	.211	.027
		N	183	183	183	183
	scores of using English to engage with information effectively	Correlation Coefficient	.666**	.080	.051	.206**
		Sig. (2-tailed)	.000	.279	.497	.005
		N	183	183	183	183
	scores of information literacy level	Correlation Coefficient	1.000	.103	.075	.171*
		Sig. (2-tailed)	.	.166	.311	.021
		N	183	183	183	183
	self-rated information search	Correlation Coefficient	.103	1.000	.487**	.229**
		Sig. (2-tailed)	.166	.	.000	.002
		N	183	183	183	183
	self-rated source evaluation	Correlation Coefficient	.075	.487**	1.000	.263**
		Sig. (2-tailed)	.311	.000	.	.000
		N	183	183	183	183
	self-rated information use	Correlation Coefficient	.171*	.229**	.263**	1.000
		Sig. (2-tailed)	.021	.002	.000	.

	N	183	183	183	183
self-rated English use	Correlation Coefficient	.141	.266**	.382**	.241**
	Sig. (2-tailed)	.057	.000	.000	.001
	N	183	183	183	183
self-rated information literacy level	Correlation Coefficient	.192**	.313**	.370**	.291**
	Sig. (2-tailed)	.009	.000	.000	.000
	N	183	183	183	183

Correlations

			self-rated English use	self-rated information literacy level
Spearman's rho	scores of developing search strategies	Correlation Coefficient	.147*	.117
		Sig. (2-tailed)	.047	.116
		N	183	183
	scores of evaluating information sources	Correlation Coefficient	-.105	-.044
		Sig. (2-tailed)	.156	.550
		N	183	183
	scores of using information ethically	Correlation Coefficient	.009	.138
		Sig. (2-tailed)	.900	.063
		N	183	183
	scores of using English to engage with information effectively	Correlation Coefficient	.171*	.260**
		Sig. (2-tailed)	.021	.000
		N	183	183
	scores of information literacy level	Correlation Coefficient	.141	.192**
		Sig. (2-tailed)	.057	.009
		N	183	183
	self-rated information search	Correlation Coefficient	.266**	.313**
		Sig. (2-tailed)	.000	.000
		N	183	183
	self-rated source evaluation	Correlation Coefficient	.382**	.370**
		Sig. (2-tailed)	.000	.000
		N	183	183
	self-rated information use	Correlation Coefficient	.241**	.291**
		Sig. (2-tailed)	.001	.000
		N	183	183
	self-rated English use	Correlation Coefficient	1.000	.408**
		Sig. (2-tailed)	.	.000
		N	183	183
	self-rated information literacy level	Correlation Coefficient	.408**	1.000
		Sig. (2-tailed)	.000	.
		N	183	183

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

15. Correlation of hearing/reading about information literacy and information literacy scores/self-assessment

```
FREQUENCIES VARIABLES=IL_reading
  /ORDER=ANALYSIS.
```

Frequencies

Statistics

information literacy reading

N	Valid	183
	Missing	0

information literacy reading

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no	161	88.0	88.0	88.0
	yes	22	12.0	12.0	100.0
	Total	183	100.0	100.0	

```
CROSSTABS
  /TABLES=IL_reading BY score_overall_coded
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT EXPECTED
  /COUNT ROUND CELL.
```

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
information literacy reading * coded overall information literacy scores	183	100.0%	0	0.0%	183	100.0%

information literacy reading * coded overall information literacy scores Crosstabulation

			coded overall information literacy scores			Total
			low	average	high	
information literacy reading	no	Count	24	129	8	161
		Expected Count	19.0	135.0	7.0	161.0
	yes	Count	1	21	0	22
		Expected Count	6.0	15.0	1.0	22.0
Total		Count	25	150	8	183
		Expected Count	25.0	150.0	8.0	183.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.169[a]	2	.205
Likelihood Ratio	4.568	2	.102
Linear-by-Linear Association	.326	1	.568
N of Valid Cases	183		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is .96.

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.132	.205
	Cramer's V	.132	.205
N of Valid Cases		183	

```
CROSSTABS
  /TABLES=IL_reading BY self_IL_coded
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT EXPECTED
  /COUNT ROUND CELL.
```

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
information literacy reading * self-rated information literacy level coded	183	100.0%	0	0.0%	183	100.0%

information literacy reading * self-rated information literacy level coded Crosstabulation

			self-rated information literacy level coded			Total
			low	average	high	
information literacy reading	no	Count	33	90	38	161
		Expected Count	33.4	84.5	43.1	161.0
	yes	Count	5	6	11	22
		Expected Count	4.6	11.5	5.9	22.0
Total		Count	38	96	49	183
		Expected Count	38.0	96.0	49.0	183.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.107[a]	2	.017
Likelihood Ratio	7.785	2	.020
Linear-by-Linear Association	2.383	1	.123
N of Valid Cases	183		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 4.57.

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.210	.017
	Cramer's V	.210	.017
N of Valid Cases		183	

16. Cronbach's α reliability coefficient

```
RELIABILITY
  /VARIABLES=F_1 F_2 F_3 F_4 F_5 F_6 F_7 F_8 F_9 F_10 E_1 E_2 E_3 E_4 E_5 U_1 U_2
U_3 U_4 UE_1 UE_2
    UE_3 UE_4 UE_5 UE_6
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /SUMMARY=TOTAL.
```

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	183	100.0
	Excluded[a]	0	.0
	Total	183	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.646	25

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
call number	63.09	75.575	.155	.641
OPAC	63.16	80.533	-.111	.673
book table of contents	63.58	77.707	.049	.651
book index	63.70	71.726	.230	.634
boolean operators 1	61.64	74.803	.301	.630
boolean operators 2	62.42	72.762	.226	.634
truncation	63.75	70.827	.332	.622
narrowing search results	64.51	75.284	.333	.630
broadening search results	64.21	71.762	.470	.615
search fields	63.09	74.981	.353	.629
appropriate information sources	63.24	74.030	.309	.628
appropriate online information sources	63.10	71.028	.278	.628
authoritative information sources	62.52	74.372	.203	.637
authoritative online information sources	63.03	71.763	.295	.626
information content evaluation	64.66	72.280	.386	.620
plagiarism	64.23	80.145	-.095	.651
copyright 1	63.62	73.468	.194	.638
copyright 2	63.83	76.999	.131	.643
following ethical/legal instructions	64.55	78.534	.040	.649
identifying important information from text files and documents written in English	64.28	71.699	.272	.629
understanding the meaning of a citation written in English	62.50	74.438	.200	.637
identifying appropriate search fields presented in English	63.38	73.864	.264	.631
understanding the meaning of the English book's title	64.56	74.852	.329	.629
evaluating the content of information written in English	64.01	73.588	.147	.646
understanding the message in relation to ethical issues written in English	62.73	74.966	.137	.645

```
RELIABILITY
  /VARIABLES=self_IL self_F self_E self_U self_UE
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /SUMMARY=TOTAL.
```

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	183	100.0
	Excluded[a]	0	.0
	Total	183	100.0

a. Listwise deletion based on all variables in the procedure.

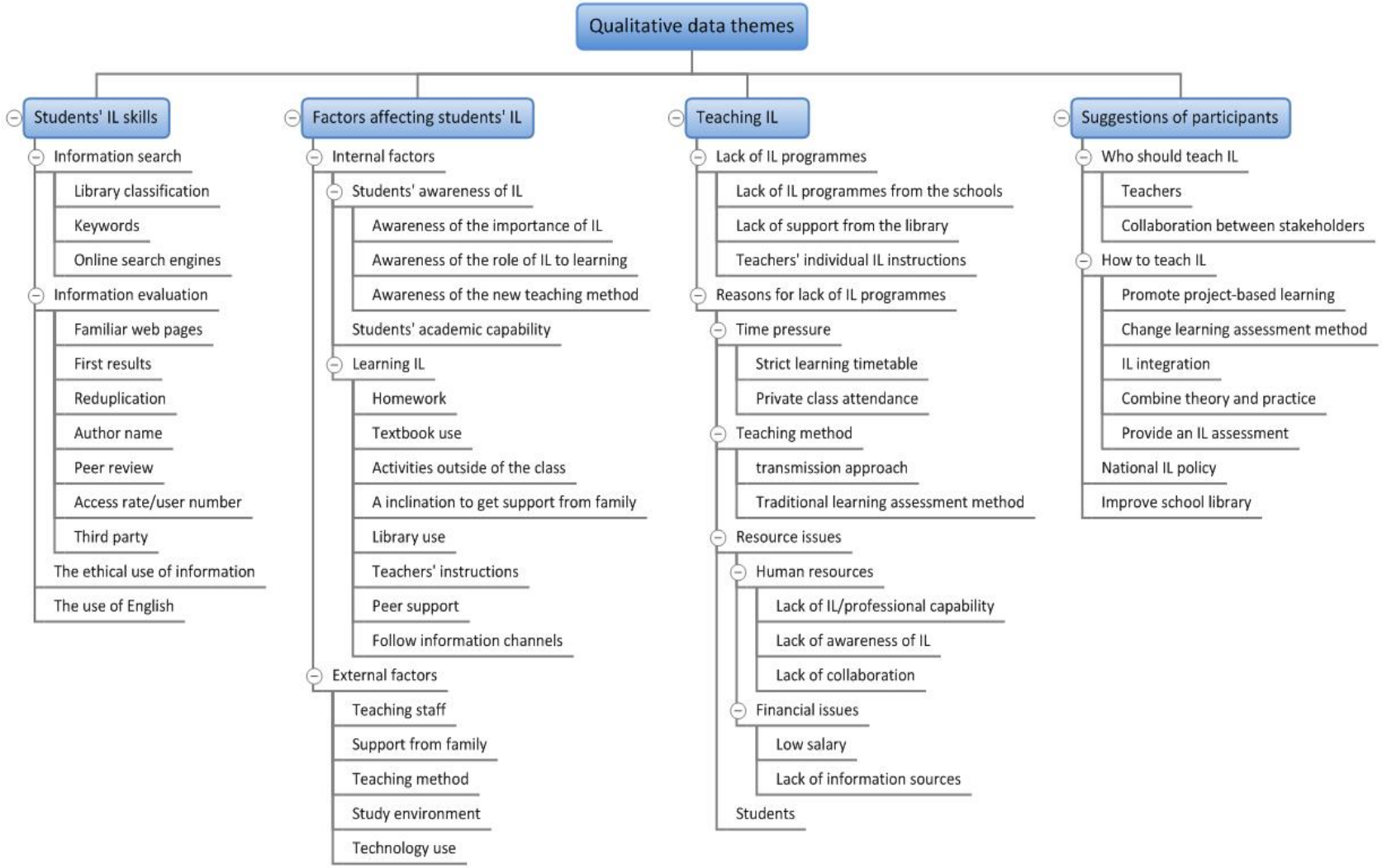
Reliability Statistics

Cronbach's Alpha	N of Items
.708	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
self-rated information literacy level	12.32	7.712	.475	.656
self-rated information search	12.23	7.947	.443	.668
self-rated source evaluation	12.40	7.407	.599	.611
self-rated information use	11.87	7.488	.369	.706
self-rated English use	12.78	7.065	.477	.655

Appendix 39. Qualitative data themes



Appendix 40. Vietnam's educational statistics

GENERAL EDUCATION (2015-2016)	
SCHOOL	**28,951**
Primary	**15,254**
Public	15,145
Non-Public	109
Lower Secondary	**10,909**
Public	10,861
Non-Public	48
Upper secondary	**2,788**
Public	2,348
Non-Public	440
STUDENTS	**15,353,785**
Female	7,540,074
Male	7,813,711
Primary	**7,790,009**
Female	3,735,231
Ethnic minorities	1,354,009
Public	7,732,994
Non-Public	57,015
Lower Secondary	**5,138,646**
Female	2,506,551
Ethnic minorities	834,429
Public	5,094,220
Non-Public	44,426
Upper secondary	**2,425,130**
Female	1,298,292
Ethnic minorities	299,394
Public	2,250,972
Non-Public	174,158
TEACHERS	**861,369**

Female	618,844
Male	242,525
Primary	**396,843**
Female	308,883
Public	392,544
Non-Public	4,299
Teacher/Class ratio	1.4
Lower Secondary	**313,626**
Female	214,427
Public	309,368
Non-Public	4,158
Teacher/Class ratio	2.04
Upper secondary	**150,900**
Female	95,534
Public	137,475
Non-Public	13,425
Teacher/Class ratio	2.35
HIGHER EDUCATION (2015-2016)	
COLLEGE	
INSTITUTIONS	219
Public	189
Non-Public	30
Students	**449,558**
Public	392,025
Non-Public	57,533
Full time	137,908
Part-time	5,727
Teaching Staff	**24,260**
Female	12,777
Public	20,309
Non-Public	3,951
Classification by qualifications	

PhD	633
Master	12,365
University & College degrees	10,510
Other qualifications	208
UNIVERSITIES	
INSTITUTIONS	**223**
Public	163
Non-Public	60
Students	**1,753,174**
Public	1,520,807
Non-Public	232,367
Full time	1,370,619
Part-time	295,261
Teaching Staff	**69,591**
Female	32,690
Public	55,401
Non-Public	14,190
Classification by qualifications	
PhD	13,598
Master	40,426
Specialist 1-2	620
University & College degrees	14,897
Other qualifications	50

Appendix 41. Tool for real-time assessment of information literacy skills: TRAILS

Twelfth Grade General Assessment 1

BACK

1 You are learning about the United States presidential elections in Government class. You learn that the U.S. Constitution created an Electoral College that has the final say in presidential elections. You learn that there has been much debate surrounding the need for an U. S. Electoral College. You must now write a three-page paper about the United States Electoral College. Which of the following questions below is too narrow a topic for a three-page paper?

CHOOSE ONE ANSWER.

- What is the world history of electoral colleges?
- What is the selection process and responsibilities for the U.S. Electoral College electors?
- What is the historical and current controversy surrounding the U.S. Electoral College?

2 A student began an investigation about the use of cell phones in school. The research focused on arguments against the use of cell phones because of their distractive nature. While doing research, the student found information about the use of cell phones as a student response tool in the classroom. The student would now like to change the focus of the research paper. Choose the answer that best reflects the new focus of this student's research.

CHOOSE ONE ANSWER.

- 1. Cell phones create too much distraction in the classroom.
- 2. Cell phones are a good educational tool.
- 3. Cell phones can be used by classroom teachers as a student response tool.
- 4. Student cell phone use in the classroom is increasing.

3 Consider the topic below as a possible topic for your four-page research paper about World War II. Is the topic too broad, too narrow, or a good topic for the paper? "The treatment of Jews by the Nazis during World War II was a form of human rights abuse."

CHOOSE ONE ANSWER.

- Topic too broad
- Topic too narrow
- Good topic

4 You have just been assigned to research an artist and the influence of art on society. You are assigned to write a seven-page paper and include at least five different sources. Of the topic questions below, which question would best address the assignment?

CHOOSE ONE ANSWER.

- What was the artist's most famous piece of art?
- How did the artist's work influence other artists and society?
- When and where did the artist live?
- With whom did the artist socialize?

5 You are a member of the school speech and debate team. You will be debating genetic engineering and want to have the most accurate and convincing information. In order to narrow your search to the most accurate information from a scientific viewpoint what resource would you use? Choose the resource that would narrow your search to the most accurate information from a scientific viewpoint.

CHOOSE ONE ANSWER.

- Science encyclopedia
- A book about genetic engineering
- A recent article in a news magazine about genetic engineering
- Articles about genetic engineering from a science journal

6 You are writing a paper for Botany class about the process of plant pollination and have had some difficulty finding information. You want to broaden your search to see if you can find more information. Find the answer below that reflects a broader search.

CHOOSE ONE ANSWER.

- Animal plant pollinators
- Honey bee pollination
- Plant pollination

- Methods of plant pollination

7 You have been asked to research and give a presentation on the future of stem cell research. Which group of multiple sources would provide the most productive search?

CHOOSE ONE ANSWER.

- An interview with a science professor, a science encyclopedia, a local newspaper
- An interview with a stem cell researcher, a science database, a science encyclopedia
- An interview with a science professor, a science database, a local newspaper

8 You are creating a video public service announcement for Students Against Destructive Decisions. You decide to include driving under the influence accident statistics. Which of the following group of resources would provide you with the most useful information?

CHOOSE ONE ANSWER.

- .gov websites, books, research database
- .gov websites, books, local newspapers
- books, research database, local newspaper
- .gov websites, interview with local police officer, research database

9 In economics, students use virtual money to invest in a stock market simulation project. Students use investment information to make wise investment decisions. Each student works independently with the goal to earn the most through the stock market simulation investments. The winner receives a prize. If you were trying to win the stock market simulation, what sources would you consult for investment information and tips?

CHOOSE ONE ANSWER.

- Local newspaper, online business journal, business research database.
- Local newspaper, business journal, a book on the stock market.
- A bank employee who is a family friend, business research database, a book on the stock market.

10 You are researching the effects of dieting for a unit on nutrition in your science class. You decide to focus on comparing two particular diets and want to learn more about people's personal experiences while on them. Besides personal interviews, since you

only know one person who used one of the diets, which of the following Internet sources could give you some personal insight?

CHOOSE ONE ANSWER.

- A hospital website
- An online forum about each of the diets
- Studies on the diets from .edu sites
- A health database, such as Medline

11 You must prepare a presentation for your school's Veterans Day assembly using **only primary sources**. Which of the following is an example of a secondary source and could **not** be used in your presentation?

CHOOSE ONE ANSWER.

- A soldier's discharge papers filed at a county courthouse
- A soldier's journal
- A chapter in a history book that highlights a particular soldier's life
- A map of a battlefield

12 You must create and maintain a blog about the future of technology for an assignment in your computer class. You will use a tool to monitor how many hits your blog receives, and there will be a prize for the best blog. Before you get started, you want to see other examples of popular blogs. How would you best locate some examples of popular blogs?

CHOOSE ONE ANSWER.

- Use a specialized search engine, such as Technorati, to see a list of popular blogs
- Locate a book about blogs in the library's online catalog
- Do a keyword search in a search engine, such as Google
- Complete a survey of staff and students to see which blogs they read

13 You are learning about cancer in health class and are to develop 7-10 slides in a PowerPoint presentation outlining cancer symptoms. Which of the following sources would provide the best information for the creation of your presentation?

CHOOSE ONE ANSWER.

- General magazine/journal research database

- News website
- Government website
- Science magazine/encylopedia research database

14 Your United States history teacher requires you to create a presentation on recycling in your city. You must include one primary source item on your Works Cited page. Which of the items below qualifies as a primary source?

CHOOSE ONE ANSWER.

- Memo from the mayor to the city council addressing recycling
- Brochure used by the city to promote recycling
- Newspaper article about the lack of recycling in the city
- The city's Web page dealing with trash pickup and recycling

15 Your librarian helps you to locate the book she says is the "best resource" for your topic. It is 356 pages long! What is the best way to find the information that you need?

CHOOSE ONE ANSWER.

- Skim the chapters
- Flip through the book
- Use the table of contents
- Use the book's index

16 You are required to do a three-minute informative speech for Economics 101 and are searching for information on game theory as proposed by Nobel Prize winner John Nash. Since using his name provides only three articles, you must refine your search. Which keyword combination would you use for your follow-up search?

Select the best keyword combination for your next search.

CHOOSE ONE ANSWER.

- John Nash **AND** game theory
- John Nash **OR** game theory
- Game theory **NOT** John Nash
- Nobel Prize **AND** game theory

17 Your teacher has assigned you to locate five quality database sources dealing with

health care. The best way to keep track of your sources is by creating:

CHOOSE ONE ANSWER.

- Source cards
- Spreadsheet
- Works Cited page
- All of the above

18 Your English teacher requires three print literary critiques for your senior research paper on Victor Hugo. Which source **does not** include literary critiques?

CHOOSE ONE ANSWER.

- Library subscription online literary index to print resources
- Library reference books on writers
- Library book critiquing Victor Hugo's works
- Library subscription online encyclopedia article about Victor Hugo

19 You have been studying local, state and national government in the United States. You have learned that in the U.S. all forms of government create records that are accessible to the public. You have just been assigned a research project involving information from public records about public education in your state. Which source below would you use to find your information?

CHOOSE ONE ANSWER.

- Online Encyclopedia
- Your State Department of Education website
- A book about your state in the library
- General search engine

20 While conducting a search on a commercial search engine, you retrieve a result from education Web address (.edu) that begins:

"I believe it is nearly essential to have some level of information literacy to understand and fully participate in college level classes. Today's society has immersed itself in the technology of computers and the Internet to the extent that knowledge and understanding of these concepts has become indispensable to access resources which allow students to achieve their goals."

From these statements, would you quality this source as an authoritative source?

CHOOSE ONE ANSWER.

- Yes, it is a credible source because it comes from a .edu address
- Yes, it is a credible source because information literacy is important
- No, it is not a credible source because it states the author's opinion
- No, it is not a credible source because students do not need technology to achieve their goals.

21 Compare the following two paragraphs, then identify which author discusses the statement below.

Author 1: "Although many scientists who worked to create this weapon and many of the military who would have to use it opposed its use to some degree, the general public backed Truman in his decision to call for unconditional surrender. In a June 10th Gallup Poll, 82% of Americans surveyed stated that the Japanese were a more heartless country than the Germans (18%). Many felt that destroying one of Japan's cities with this new weapon would simply be retaliation for the devastating attack of Pearl Harbor which brought the United States into the war in December of 1941. With only 20% of Americans surveyed believing that the war would end by the end of 1945, the idea that a single weapon would bring a quick and definite end to the war in Japan also confirmed the belief held by Truman and his Cabinet that the atomic bomb should be used."

Author 2: "During World War II, President Truman had to make many difficult decisions regarding military matters, including, most importantly, the decision to utilize the new atomic bomb. In order to make these decisions, he looked to military authorities, his cabinet members, scientists and the views of the American public. Most of the American public, 80%, believed that the war would not end within the year 1945. Despite the objections of others, Truman felt he had the firm backing of the general United States population and his Cabinet; he believed that the use of the atomic bomb would be justified in order to end the war quickly."

Which author discusses this statement: "Some scientists felt that the atomic bomb should be demonstrated to the United Nations before its use."?

CHOOSE ONE ANSWER.

- Author 1
- Author 2
- Both Author 1 and 2
- Neither Author 1 or 2

22 You are researching the history of MTV. Given the sources below, select the best place to begin your research.

CHOOSE ONE ANSWER.

- Library subscription electronic journal database
- Print encyclopedia
- Library subscription newspaper database
- Internet search engine such as Google
- Library online catalog

23 Often the article title will alert the researcher to bias. Based on the following article title, indicate the likelihood of bias in the article.

"Why we Should Ban Human Cloning", *New England Journal of Medicine*

CHOOSE ONE ANSWER.

- Article is most likely biased
- Article is most likely unbiased.

24 A city councilman has been quoted in the local newspaper as saying that a well known car company has a commercial stating that driving a hybrid will mean less money for terrorists. You are wondering if the car company actually produced the commercial. How would you best verify the councilman's statement?

CHOOSE ONE ANSWER.

- Visit the website of the car company
- Visit the website for the terrorist organization
- Go to the library and look at magazines for marketing

- Go to the library and research oil companies

25 You have been asked to write a three-page paper for your college freshman English class. You will use MLA format for your paper. The professor has stressed that citation is extremely important. You feel confident about your knowledge of MLA citation but are trying to remember the examples of when you do not have to use MLA citation. Choose the answer that **most** correctly indicates when MLA citation is **not** needed.

CHOOSE ONE ANSWER.

- You do not need to cite sources for familiar proverbs, well-known quotations or common knowledge.
- You do not need to cite sources for common knowledge such as the fact that Warren G. Harding was our 29th president.
- You do not need to cite sources for information that is not written by experts in the field.

26 Read the passage below and then choose from the three responses the one that is a paraphrase of the passage:

Students must learn to paraphrase information when writing research papers for class. Paraphrasing is restating an author's ideas in the student's own words. The paraphrase can be the same length as or longer than the author's stated ideas. A paraphrase is different from summarizing when a student would restate only the main ideas of the author's writing. When using the author's words exactly as they are written, the student needs to use quotation marks. Finally, students must learn that paraphrasing an author's ideas does not mean to change just a few of the words in the passage or excerpt. As stated in the beginning, the author's ideas must be restated in the student's own words.

CHOOSE ONE ANSWER.

- Students should learn to paraphrase information when doing a research paper. Paraphrasing means to restate the author's ideas in your own words. The paraphrase can be about the same length or more expanded than the original ideas. A paraphrase is different from summarizing where you only restate the important ideas of the author's writing. If you use all of the author's words

exactly as written, you need to use quotation marks. When you paraphrase do not just change a few of the author's words with synonyms, instead just restate the author's words with your own.

- When doing a research paper, students need to learn the skill of paraphrasing, or putting the words of a passage into their own words. Paraphrasing differs from summarizing, when only the main ideas of the work or passage are stated. It also differs from a quotation when the words of the author are placed in quotation marks. Changing just a few words of the passage by using synonyms is not paraphrasing; students must use their own words.
- Learning to paraphrase is important in doing research papers for class. To paraphrase, restate the author's ideas in your own words. To summarize the author's ideas, just restate the main ideas. Finally, if you use the author's words as written, then you must use quotation marks.

27 Part of the copyright law addresses "fair use" of reproduced work. "Fair use" is the limited use of copyrighted materials without obtaining permission. Generally, these limited uses include criticism, comment, news reporting, teaching, scholarship, and research. The law outlines nonprofit educational institutions use versus commercial purposes use. The law addresses consideration of the amount of the copyrighted material used. With this information in mind, choose the one example listed below that is not an example of "fair use".

CHOOSE ONE ANSWER.

- As a student, you are preparing a multimedia presentation to show different types of literary devices. You will use some quotes from Shakespeare's plays to demonstrate these literary devices.
- Your student-produced newscast will use parts of the President's inaugural address as part of the daily news report.
- Your senior slide show includes entire songs from various musical artists as background music. You will put the slide show online for all parents and community members to view.
- As part of the student talent show, your group will parody parts of a song from a country-western artist.

28 Your school drama club would like to create a play based on a popular young adult

novel. You want to use the same character names and places as in the novel. You will perform the newly created play at your school for parents and community members. What is the appropriate way to handle the use of the characters and places from this popular novel and adhere to copyright?

CHOOSE ONE ANSWER.

- Since you are using the character names and places from a popular novel for your play, you must ask the author's permission.
- Since you are using the character names and places from a popular novel for your play, you must make a statement in the play program that gives attribution to the author and their work.
- Since you are using the character names and places from a popular novel for your play and your play is completely different from the story in the novel, you do not need to do anything as you have created something new.

29 You attend a major university where the pressures of the workload at the college level sometimes seem insurmountable. With so much work to do, it is tempting to copy someone else's paper or buy one on the Internet. Another quick solution might be to paraphrase someone else's ideas and use them as your own. In both cases, the situation described is considered plagiarism. What are the consequences of choosing either of these two cases in a university setting?

CHOOSE ONE ANSWER.

- The student will receive a failing grade for the assignment and/or course at the discretion of the professor. In addition, the event will be noted in the student's permanent record.
- The student must file the violation with the Office of Student Conduct where disciplinary action will be taken.
- The student risks suspension or expulsion, a failing grade on the assignment and/or task and a notation on the student record. Any disciplinary action is part of the student record for four years after graduation.

30 From the list of items below regarding plagiarism and the use of intellectual property, choose the one that is **not** an example of plagiarism.

CHOOSE ONE ANSWER.

- Used a section of your sister's biology paper about genetic coding in your own

paper about genetics and DNA.

- Used a quote from a literary criticism book as part of your own comments about the literary works of Shakespeare and cited the book in your bibliography.
- Used information from a blog about black holes and wrote part of a science paper based on the comments from the blog.
- Used a quote from a literary criticism book as part of a paper about the literary works of Shakespeare and did an in-text and bibliographic citation.

Twelfth Grade General Assessment 2

BACK

1 You have been assigned a three-page research paper in sociology on school violence and are using an online database to find information. When you search the database for magazine and newspaper articles using "school violence" you retrieve over 3000 hits! You want to narrow your topic and the database provides a "Narrow Results By Subject" menu. Of the the subjects from the menu listed below, which one will best narrow the topic for your three-page paper?

CHOOSE ONE ANSWER.

- School violence
- United States
- Violence
- Bullying in schools

2 Your biology teacher has assigned a five-page paper about alternative energy. You must choose a topic that is neither too broad nor too narrow to complete the assignment. Which topic below will you choose?

CHOOSE ONE ANSWER.

- Renewable energy such as wind turbines and solar power will save our planet.
- Electric cars can be built to use wind turbines and solar power.
- Wind turbines can provide energy to farms economically and safely.
- Many renewable energy sources exist such as wind turbines, solar power and

water power.

3 You have just been assigned to research an artist and choose a specific piece of work by the artist for your English class in which you will write a seven-page paper and include at least five different sources. Of the topic questions below, which question would best address the assignment?

CHOOSE ONE ANSWER.

- How did the artist's life and work influence other artists and society?
- What was the artist's most famous piece of art?
- When was the artist alive?
- Where did the artist live?

4 In 2000 the United States Congress enacted legislation known as the Federal Children's Internet Protection Act or CIPA. This legislation stated that schools and libraries receiving federal funds must use Internet filtering software to filter images and sites that are obscene or harmful to minors. There has been much controversy surrounding the CIPA. Some people argue that the legislation is a necessity. Some argue that the legislation is censorship. Consider the topic below for a five-page argumentative research paper. Indicate whether this topic would be too broad, too narrow or a good topic for a five-page paper.

In the United States, Internet filtering in schools is not a form of illegal censorship.

CHOOSE ONE ANSWER.

- Good topic
- Too broad
- Too narrow

5 For a final project in science, your teacher has assigned a paper on a topic of your choice. You are having a hard time focusing your topic of interest. Which of the following resources would be most helpful in focusing the topic for a science project?

CHOOSE ONE ANSWER.

- The subject area of an online science database.
- The table of contents of a science book.

- A Google search using "science topics".
- A science magazine or journal.

6 In your social studies class you are assigned a three-page paper requiring a topic relating to important events in United States history. Which of the following research questions would represent the best topic for a three-page paper?

CHOOSE ONE ANSWER.

- What reasons did each of the signers of the Declaration of Independence have for signing the document?
- Why did the United States decide to purchase the Louisiana Territory?
- What are three reasons why the United States entered into World War II?
- What were the political, social and economic impacts of the Civil War.?

7 In preparation for writing a career exploration paper, you have gathered information about schooling, salary potential, and job outlook. However, you need to know what the job is like on a typical day. Which source would provide the best information?

CHOOSE ONE ANSWER.

- A website about the career.
- A research database.
- An interview with a person in that career.
- An interview with a college student studying in that field.

8 You are researching the effects that colors have on people for an assignment in psychology. You must locate a book source, but you cannot find one in your school or local public library. Which library would be the best place to check for a book on the subject you need?

CHOOSE ONE ANSWER.

- Government library
- Law library
- Museum library
- University library

9 You are gathering information about colleges so that you can complete applications for those in which you are interested in attending. You want to base your decision on tuition costs, types of degree programs, and campus life. Which of the following

resources would provide you with the **least,** amount of information to answer to your questions?

CHOOSE ONE ANSWER.

- Your school library's online catalog.
- Some .gov sites on attending college, such as students.gov.
- College .edu sites sponsored by the colleges that interest you.
- Attending a local college fair.

10 Your assignment is to take a stand on a current event and support your stand with evidence. You have chosen to argue that schools should provide students with personal laptop computers since you have seen recent stories on the news about local schools doing this. In which of the sources would you be likely to find support for your proposal -- that personal laptop computers increase student learning?

CHOOSE ONE ANSWER.

- An encyclopedia of education history, local newspapers, scholarly journals
- Interviews with schools providing personal laptops, books, encyclopedia of education history
- An education research database, such as ERIC, interviews with schools providing personal laptops

11 Your English teacher expects that your bibliography for a presentation you are doing include a variety of sources, including primary, secondary, and tertiary sources. You have located a scholarly journal article that summarizes research completed on your topic. The author of the article quotes from and cites the research. This article would be considered which type of source?

CHOOSE ONE ANSWER.

- Primary
- Secondary
- Tertiary

12 Identify the statement that is **not** true about a scholarly journal.

CHOOSE ONE ANSWER.

- Scholarly journals are peer-reviewed or refereed.
- Scholarly journals always include bibliographies citing sources.

- Scholarly journals report on research in a particular subject.
- Scholarly journals are easily located by using search engines such as Google or Yahoo.

13 You found a lengthy book that is a biography of Claude Monet. You need to find the chapter that deals with his work in Giverny. Which of the following do you use to locate the chapter on Giverny?

CHOOSE ONE ANSWER.

- Summary in the library catalog
- Table of contents
- Index
- All of the above

14 You are creating a newscast on the decade of the 1940's for your drama class. Which of the sources below would **not** be helpful to you?

CHOOSE ONE ANSWER.

- CDs containing 1940's music
- Online biographies
- News clips about World War II
- Plays written about the 1940's

15 In your class, Contemporary Issues 101, you must create a poster comparing infant mortality rates from around the globe. Your assignment includes the following countries: United States, China, Germany, Brazil and the Sudan. You decide to use a current almanac to find the infant mortality rates over the last decade. How will you find the information in the almanac?

CHOOSE ONE ANSWER.

- Index
- Table of contents
- Glossary
- Index and table of contents

16 You are researching various colleges in order to decide which university best meets your needs. The fields you have decided to include are tuition, room and board, number of applicants, the percentage admitted, and the average SAT/ACT test scores.

The best way to record this information would be:

CHOOSE ONE ANSWER.

- Note cards
- Spreadsheet
- Word processing document
- Table/Chart

17 Your assignment is to create a newspaper page depicting the fall of the Berlin Wall. Which search terms are most appropriate for an online search?

CHOOSE ONE ANSWER.

- Fall **OR** Berlin Wall **OR** Communism
- Fall **AND** Berlin Wall **AND** Newspapers
- Germany **AND** Berlin **AND** Wall
- Berlin Wall **AND** decline **NOT** beginning

18 Your Spanish teacher has asked you to do a speech on Spanish artists of the 20th Century. The rubric requires that you incorporate three different types of sources into your report. Which resource would you be **least** likely to include in the report?

CHOOSE ONE ANSWER.

- Art video on Spanish artists of the 20th century
- Art encyclopedia article on Spanish art in the 20th century
- Original artwork by a 20th century Spanish artist
- Art journal article retrieved from a library subscription art database

19 You have just received a kit to take a DNA sample from yourself and send the DNA sample in to the Human Genome Project for analysis. Before you send the sample, you decide to research the background of the Human Genome Project and how your DNA sample will be used. Which of the sources listed below would give the most accurate and current background about the project?

CHOOSE ONE ANSWER.

- A blog site with the focus on DNA
- A biology news website
- A scholarly science database

- A world statistics website

20 Use the passage below to answer the following question.

One of several reasons behind the obesity crisis has been the development of suburban America and the urban sprawl trend. As suburbs began to expand in the 1980's, automobile dependence became pronounced. People in suburbs no longer walk to get a loaf of bread and their children no longer walk to school. This trend of dependence on automobiles and the resulting impact on obesity is demonstrated in a study done by Reid Ewing, a research professor at the National Center for Smart Growth at the University of Maryland. He surveyed people living in both the most populated counties in the United States and the least populated. He found that the residents of sprawling Geauga County in Ohio were an average of 6.3 lbs. heavier than the residents of crowded Manhattan County in New York.

You have been assigned to write a paper analyzing the above passage. Where would you look to start your research?

CHOOSE ONE ANSWER.

- The website of a management company developing small urban communities
- The website of a suburban city
- The website of the National Center for Smart Growth
- The website of a non-profit health organization

21 Use the passage below to answer the question.

Information literacy is a critical issue in today's society. People are increasingly being inundated with new technology in all aspects of their lives. Because of these changes in our society, librarians and educators must be facilitators; people occupying these professions need to have an increasing awareness and knowledge of these important and useful services. Lisa J. Servon discusses these issues in her book *Bridging the Digital Divide*. The issues surrounding the separation between the "haves" and the "have nots" in the areas of information and information literacy are a fundamental problem in today's society. Sevron's assessment is that general inequality cannot be solved by technology. Even if one does not agree with this assessment, the information

about the digital divide and the seriousness of the situation she writes about in this book are critical to understanding the problems which are being faced by those who do not have the technological knowledge to successfully compete in today's world. Where technology is concerned, there is a disparity of knowledge which, if not remedied, is having and will continue to have a serious and detrimental effect on our society as a whole.

Which of the following methods would you use to obtain more information regarding Lisa J. Servon in order to determine her legitimacy in presenting an argument for or against information literacy?

CHOOSE ONE ANSWER.

- Use the library catalog to find the book *Bridging the Digital Divide* and other books by her.
- Use an electronic journal database to find articles written about her.
- Conduct a search using a commercial search engine to determine more information regarding her background.
- All of the above.

22 Compare the following two paragraphs, and then identify which author discusses the statement below.

Author 1: "Although many scientists who worked to create this weapon and many of the military who would have to use it opposed its use to some degree, the general public backed Truman in his decision to call for unconditional surrender. In a June 10th Gallup Poll, 82% of Americans surveyed stated that the Japanese were a more heartless country than the Germans (18%). Many felt that destroying one of Japan's cities with this new weapon would simply be retaliation for the devastating attack of Pearl Harbor which brought the United States into the war in December of 1941. With only 20% of Americans surveyed believing that the war would end by the end of 1945, the idea that a single weapon would bring a quick and definite end to the war in Japan also confirmed the belief held by Truman and his Cabinet that the atomic bomb should be used."

Author 2: "During World War II, President Truman had to make many difficult decisions regarding military matters, including, most importantly, the decision to utilize the new atomic bomb. In order to make these decisions, he looked to military authorities, his cabinet members, scientists and the views of the American public. Most of the American public, 80%, believed that the war would not end within the year 1945. Despite the objections of others, Truman felt he had the firm backing of the general United States population and his Cabinet; he believed that the use of the atomic bomb would be justified in order to end the war quickly."

Which author discusses this statement: "The majority of Americans believed that the war would not end within the year 1945."?

CHOOSE ONE ANSWER.

- Author 1
- Author 2
- Both Author 1 and 2
- Neither Author 1 or 2

23 You are searching for information about the country, Russia. Given the sources below, select the best place to begin your search.

CHOOSE ONE ANSWER.

- Library subscription electronic journal database
- Print encyclopedia
- Library subscription newspaper database
- Internet search engine such as Google
- Library online catalog

24 Often the article title will alert the researcher to bias. Based on the following article title, indicate the likelihood of bias in the article.

"On the Character of the American Political Order", *The Promise of American Politics*

CHOOSE ONE ANSWER.

- Article is most likely biased.
- Article is most likely unbiased.

25 You want to include a portion of a video about Woodstock in a presentation you are doing about music in the 1960's. According to copyright law, how much of the video are you permitted to use? Choose the correct answer below:

CHOOSE ONE ANSWER.

- You may use half of the original video as part of your multimedia presentation.
- You may use one minute or 5%; whichever is less from the original video as part of the multimedia project.
- You may use up to 10% or 3 minutes; whichever is less, as part of a multimedia project.

26 You are preparing a PowerPoint presentation that your communications professor will post online. You have found some very effective images from a website that has posted the following message: "All of the images on this website are copyrighted. Please do not use any of them on a Web page, CD-ROM, printed or otherwise published work without receiving permission in advance from our site." What will you do?

CHOOSE ONE ANSWER.

- You must obtain permission or a waiver from the copyright owner before you can use the images in your PowerPoint.
- You must write and ask for permission to use these images in your PowerPoint presentation but can feel free to post the images to your presentation knowing that you have applied for permission.
- You must obtain permission from the copyright owner and must also do an in-text citation giving proper attribution.
- You must obtain permission from the copyright owner, also remembering to properly cite the image within your PowerPoint and in your bibliography.

27 "The lumbering Harley-Davidson driven haphazardly by the teen, skidded, rolled and crashed into a tree."

A student wants to use the information from the sentence above in a research paper for English class. The teacher has asked that students properly paraphrase without plagiarizing. Which of the examples below is correctly paraphrased and not plagiarized?

CHOOSE ONE ANSWER.

- The adolescent driver lost control of the huge Harley-Davidson and crashed into a tree.
- The big Harley driven haphazardly by the teen, skidded, rolled and then crashed into a tree.
- The lumbering Harley-Davidson driven by a teen driving haphazardly, skidded, rolled and crashed into a tree.
- The Harley-Davidson skidded, rolled and crashed into a tree, after being driven haphazardly by the teenager.

28 Look at the three PowerPoint slides below. Which one shows the proper way to give credit to an information source used to create the slide?

Frame 1

Percent of U.S. School-Age Children Considered Obese or Overweight
By geographic area, the following percentage of school-age children in the U.S. that is obese or overweight: • Northeast 17% • Midwest 11% • South 9% • West 16%

Frame 2

Percent of U.S. School-Age Children Considered Obese or Overweight
According to the CDC, by geographic area, the following percentage of school-age children in the U.S. that is obese or overweight • Northeast 17% • Midwest 11% • South 9% • West 16%

Frame 3

Percent of U.S. School-Age Children Considered Obese or Overweight

By geographic area, the following percentage of school-age children in the U.S. that is obese or overweight:

- Northeast 17%
- Midwest 11%
- South 9%
- West 16%

Centers for Disease Control: http://www.cdc.gov/datastatistics

CHOOSE ONE ANSWER.

- Frame 1
- Frame 2
- Frame 3

29 In an educational setting, the consequences of plagiarism can range from the lowering of a grade, a score of "0" for the plagiarized piece, or possible expulsion from the school or university. In the work world, there are also serious consequences for plagiarism. If a reporter for a major media organization admitted to copying another journalist's work and using it as his own, the media organization will take action. Why are media organizations concerned with intellectual property rights? From the items below choose the **incorrect** reason why media organizations are concerned with intellectual property rights.

CHOOSE ONE ANSWER.

- The media wants to keep all the new materials and ideas away from the public.
- Copyright and respect for original work increases the sharing of ideas.
- Rules protecting intellectual property allows for fair competition in the media marketplace.
- The market for media exists only when the rights of the creator are defended.

30 You are a student at a university and struggling to keep ahead of all your studies and papers. You have started to procrastinate on some of your tasks. You cannot sleep and are not getting proper nutrition as you try to complete everything on time. You are

totally stressed out. You decide to forget everything by going out for the evening with friends on Friday and Saturday night! Now, it is Sunday night and you have a huge history paper due at 8:00 AM Monday. You have an outline, notes and start writing your paper at midnight. You realize you will not be able to finish in time for the 8:00 AM deadline. What should you do?

CHOOSE ONE ANSWER.

- Email your professor or call and stop by. Explain your situation and ask for an extension on the due date, even though it will mean a lower grade.
- Follow your outline and paraphrase the notes that go with the outline so you can at least finish the paper.
- Borrow your roommate's paper that she used last semester in the same class, add some of your notes and turn the paper in on time.

Twelfth Grade Develop topic

BACK

1 If you had to choose a health-related topic for your science class, which of the following topics would be too broad to write about in a three-page paper?

CHOOSE ONE ANSWER.

- Schools should not make carbonated sodas available to students at lunch.
- Nutrition, diet and exercise are important to high school students.
- Schools should continue to require that students take physical education classes.

2 During the 1980's and 1990's many United States (U.S.) companies began building manufacturing plants in countries such as China, India and Mexico. The U.S. companies did this because the people in these countries required much lower pay for the labor. Moving the jobs to other countries or companies is called outsourcing. By the year 2000 outsourcing had increased in the U.S. to include not only manufacturing of cars and toys but also professional services such as accounting, technical support and engineering. At the same time unemployment in the U.S. began to rise.

Considering this background information, review the topic below as a possible topic

for a ten-page research paper. Is this topic too broad, too narrow or a good topic for this paper?

The outsourcing of jobs by U.S. companies has long term effects on U.S. citizens.

CHOOSE ONE ANSWER.

- Topic too broad
- Topic too narrow
- Good topic

3 If given a choice of research questions to investigate in your British Literature class, which of the following would be **too narrow** to write about in a five-page paper?

CHOOSE ONE ANSWER.

- Should high school students study Shakespeare?
- How has Shakespeare's work influenced contemporary literature?
- Which of Shakespeare's plays are tragedies?
- Why do some experts believe that Shakespeare was not solely responsible for the works credited to his name?

4 You are being asked to argue for or against the death penalty in a five-page paper for your U.S. Government class. You are against the death penalty and must find support for your argument. Which group of questions will best guide your research and help you find support for your position?

CHOOSE ONE ANSWER.

- **Group 1:**

  How many prisoners have been put to death in the U.S. before evidence surfaced to prove their innocence?

  How long has the death penalty been used as a form of punishment?

  What other option exists for sentencing if the U.S. abolished the death penalty?

- **Group 2:**

  How many prisoners have been put to death in the U.S. before evidence surfaced to prove their innocence?

  What recent complications have arisen during execution procedures in the U.S.?

  What other option exists for sentencing if the U.S. abolished the death penalty?

5 You want to do a presentation to the class on using green products in the home, but your teacher said that your initial topic needed to be more focused. Read the initial topic and the revised topic. Is the revised topic broader than the initial topic or narrower than the original topic?

Initial topic:

The benefits of going green in the home with environment friendly materials.

Revised topic:

The benefits of going green in the home with non-toxic paint.

CHOOSE ONE ANSWER.

- Broader
- Narrower

6 You have been asked to research and present an argument about global warming in a five-page paper. Which of the following research questions would be narrow enough to argue in your paper?

CHOOSE ONE ANSWER.

- Should tax dollars be spent to study polar regions to learn about global warming?
- Is there really a global warming problem that affects weather around the world?
- What is global warming?

7 When assigned a five-page paper relating to the importance of physical activity, you select the topic "The importance of physical education classes in schools". After preliminary research you conclude the topic is too broad. Which of the following research questions narrows the research topic?

CHOOSE ONE ANSWER.

- The cost of physical education classes in a school budget
- The importance of physical activity for all Americans
- The effect of school physical education classes on childhood obesity

8 Which of the following concepts represents the narrowest topic for a paper?

CHOOSE ONE ANSWER.

- Renaissance literature

- William Shakespeare's life
- The impact of the collected plays of William Shakespeare
- Playwrights of England between 1400 and 1600
- Relevance of *A Midsummer Night's Dream* to contemporary theater

9 Consider the topic below as a possible topic for a five-page research paper. Indicate whether the statement would be a **Good Topic**, a **Topic Too Broad** for this paper, or a **Topic Too Narrow** for this paper.

Explain the history of women's voting rights around the world.

CHOOSE ONE ANSWER.

- Good Topic
- Topic Too Broad
- Topic Too Narrow

10 When you research a topic, it is important to know its relationship to other concepts. Which phrase represents the broadest (least specific) subject under which all of the other topics would fit?

CHOOSE ONE ANSWER.

- Pain management for older animals
- Air transport regulations for pets
- Animal welfare
- Zoo design and construction

Twelfth Grade Identify potential sources

BACK

1 Your U.S. Government teacher assigned a research project that requires you to analyze and compare voter registration data across the country to your state's voter registration. Your assignment includes comparing two states to your own state. Which of the following sources will provide you with the data necessary to make your comparison?

CHOOSE ONE ANSWER.

- U.S. Government textbook.

- Local voter registration office.
- Newspaper archives from each of the states.
- U.S. Census Bureau website.

2 You have finished studying force and motion in Physics class and must use your knowledge to build a model roller coaster with supplied materials. To research the design aspects, you will need to consult several sources. Of the sources listed, which would be the **least helpful** in building your model?

CHOOSE ONE ANSWER.

- A science and technology encyclopedia
- Streaming video footage that shows the development of a new coaster
- A diagram from a science database
- The chapter in your textbook on force and motion

3 Your social studies class is preparing for your state's primary elections as many of your classmates will be eligible to vote. There are a number of issues on the ballot. Your assignment is to research the issues so that you will be an informed voter. Which of the following sources would prove **least helpful** in your search?

CHOOSE ONE ANSWER.

- The county Board of Elections website
- Local, township or city website
- The state's website
- Local newspapers
- Government search site, such as Thomas.gov

4 You are assigned a five-page paper analyzing a theme in existential literature. You must cite a minimum of three literary criticisms. Which group of information tools will best help you find the criticisms?

CHOOSE ONE ANSWER.

- Online literature database and search engine, such as Google
- Encyclopedia and literature textbook
- Online literature database and public library catalog
- Literature textbook and online search directory, such as Yahoo directory

5 You are completing a research project for your science class, and you are permitted to include only primary sources of research in your bibliography. Which scholarly journal article would be an example of a primary source?

CHOOSE ONE ANSWER.

- An article that summarizes research and its outcomes completed on your topic
- An article that describes the actual research completed on your topic
- An annotated bibliography of research projects similar to the research in your project

6 When searching the deep Web you locate a listserv archive, a type of source you have not used previously. Which best describes the information located in a listserv archive?

CHOOSE ONE ANSWER.

- Summaries of blog posts
- Lists of used and available email account names
- Messages posted and shared by members via email addresses
- Lists of other resources available on your topic

7 Which statement**does not** identify a characteristic of a search directory, such as *Yahoo Directory* or *Librarians' Internet Index*?

CHOOSE ONE ANSWER.

- Directories are organized by subject instead of using keyword searches
- Sites in a directory are indexed and selected by people
- A directory categorizes all Internet sites, including information from databases
- Website owners can submit their sites to be listed in directories

8 In an attempt to expand your search results, you decide to use a metasearch engine, such as Dogpile. Which statement is **true** of a metasearch engine?

CHOOSE ONE ANSWER.

- Each metasearch engine returns the same results
- A metasearch engine searches more than one search engine at a time
- A metasearch engine searches all of the Internet
- Results from a metasearch engine are more relevant than results from a database

or other engine search

9 Your science teacher has assigned a research topic on nanotechnology, a subject that you know little about. Which of the search tools listed would best help you quickly locate a few reliable websites so that you can read and gather background information?

CHOOSE ONE ANSWER.

- A search engine, such as Google
- A search directory, such as Librarians' Internet Index or Google Directory
- The public library's online catalog

10 Which of the following resources would a university library be **least** likely to have available?

CHOOSE ONE ANSWER.

- Electronic access to variety of archived newspapers
- Variety of fiction titles for adults, teens, and children
- Scientific, peer-reviewed journals
- Government document collection

Twelfth Grade Develop, use, and revise search strategies

BACK

1 In a European History class, your research paper is about Martin Luther and his religious beliefs. As you begin your research, you realize that you need to refine the search terms to focus your topic on the German religious leader from the 16th century, Martin Luther; not the civil rights leader from the 20th century, Martin Luther King. Choose from the list below, the one example of a search that will help refine your search on this topic.

CHOOSE ONE ANSWER.

- Martin Luther and religion
- Martin Luther and religious beliefs not King
- Martin Luther and religious beliefs
- Martin Luther or King and religious beliefs

2 You have just finished reading *Fahrenheit 451* by Ray Bradbury and must now write a

five-page paper about his life and the influences on his writing. You would like to see if there are any other books about Ray Bradbury. Which search would you perform in your library catalog?

CHOOSE ONE ANSWER.

- Author search on: Bradbury
- Subject search on: Bradbury
- Title search on: Bradbury

3 Researchers use search limiters and expanders known as Boolean operators, which improve search results by connecting two or more search terms. Which of these four options correctly identifies the three Boolean operators?

CHOOSE ONE ANSWER.

- + - /
- AND OR NOT
- OR NOT PLUS
- AND OR EXCEPT

4 You are searching scholarly databases for current information on global warming. Which phrase guarantees that your search will supply only college level scholarly resources?

CHOOSE ONE ANSWER.

- Full text
- Boolean/Phrase
- Peer reviewed
- Advanced Search

5 Your Fitness Education 101 teacher has assigned a speech on steroid use by athletes. Using an Internet search engine, you search for the term steroids. Your result list has 5,000 results, too many to review in the time you have. Many results are trying to sell you a product, called creatine. To remove these irrelevant results you change your search terms to read as follows:

CHOOSE ONE ANSWER.

- Steroids or creatine
- Steroids not creatine

- Steroids and athletes and creatine
- Steroids and athletes not creatine

6 Your business teacher has assigned you a research topic "Marketing to the Millennial Generation". He wants you to ignore any marketing articles that relate to the baby boom generation. Which combination of search terms will produce the most efficient results when using a search engine?

CHOOSE ONE ANSWER.

- "Marketing to the millennial generation"
- "Marketing to the millennial generation not baby boom"
- Marketing and millennial not "baby boom"
- Marketing and millennial or "baby boom"

7 You are using the advanced search function to research genetic engineering in an online database. Your research has returned 3,500 articles; too many to read. How do you refine your search to return a more manageable number of articles?

CHOOSE ONE ANSWER.

- Add a related search term such as recombinant DNA
- Limit your search to one publication, e.g., *Scientific American*
- Limit your search to the last two years
- Any of the above

8 You are searching in your online library catalog for primary source material for the author Maya Angelou. Which search will you use to locate these sources?

Select the best strategy for your next search.

CHOOSE ONE ANSWER.

- Keyword
- Subject
- Author
- Title

9 Your Parenting 101 teacher wants you to include a video in your oral presentation on immunizations. As you develop your search strategy, which tools will you include when searching for videos using the keyword immunization?

CHOOSE ONE ANSWER.

- The online library catalog limiting the search to videos
- An Internet search engine limiting the search to video NOT site:youtube.com
- A library subscription online encyclopedia limiting the search to videos
- All of the above

10 Your Music Appreciation 101 teacher requires you to do a PowerPoint presentation on a musician named Dizzy Gillespie. Since you do not know anything about Dizzy Gillespie, you want to start with a general overview and finish with the most detailed information. Which resource should you check first?

CHOOSE ONE ANSWER.

- Journal article about Dizzy Gillespie
- Biographical dictionary entry about Dizzy Gillespie
- Biography of Dizzy Gillespie
- Encyclopedia article about Dizzy Gillespie

Twelfth Grade Evaluate sources and information

BACK

1 Which sentence most strongly supports the statement "Small changes that people make in their lives can have an impact on the fight against obesity"?

CHOOSE ONE ANSWER.

- Studies show that people who walk often can reduce their weight.
- I think that people who want to lose weight need to exercise by walking a minimum of thirty minutes 5 times a week.
- A 1995 study demonstrated that placing a sign between a flight of stairs and an escalator stating "Stay Health, Save Time, Use the Stairs", increased stair use from 8% to 16%.
- It is easy to lose weight if you join an exercise club and do what a trainer tells you.

2 You have been assigned a two page paper to discuss recent political activity in the Middle East. In which source below would you find the most current, accurate and objective information?

CHOOSE ONE ANSWER.

- An online newspaper index
- An online encyclopedia
- A general search engine
- An online edition of a book on the Middle East

3 Identify the fact that is **not** supported by the following paragraph.

One of several reasons behind the obesity crisis has been the development of suburban America and the urban sprawl trend. As suburbs began to expand in the 1980's, automobile dependence became pronounced. People in suburbs no longer walk to get a loaf of bread and their children no longer walk to school. This trend toward dependence on automobiles and the resulting impact on the obesity is demonstrated in a study done by Reid Ewing, a research professor at the National Center for Smart Growth at the University of Maryland. He surveyed people living in both the most populated counties in the United States and the least populated. He found that the residents of sprawling Geauga County in Ohio were an average of 6.3 lbs. heavier than the residents of crowded Manhattan County in New York.

CHOOSE ONE ANSWER.

- Dependence on cars became pronounced in the 1980's.
- People who live in Geauga County, Ohio are 6.3 lbs. heavier than people who live in Manhattan, New York.
- People who live in suburbs do not walk anywhere.
- Urban sprawl is one of several causes behind the rising obesity rate.

4 You receive an email describing a nonprofit agency that offers cleaning services to women who have cancer. You have a friend who would benefit from this free service. Which of the following sources would you use to verify that the nonprofit service is legitimate?

CHOOSE ONE ANSWER.

- The nonprofit cleaning service agency website
- A newspaper article about the agency found in a database
- Both of the above

- Neither of the above

5 You are researching for a paper on the effects of removing soft drink machines from grade schools. You find a journal article demonstrating the short-term positive effects of energy drinks that result for students who are studying. You realize a scientist employed by an energy drink company authored the journal article. Which of the following best reflects the credibility of this source?

CHOOSE ONE ANSWER.

- The author is credible because he is a scientist.
- The author is credible because energy drinks help keep students awake.
- The author is credible because it is in a journal.
- The author is not credible because an energy drink company employs him.

6 Compare the following two paragraphs, then identify which author discusses the statement below.

Author 1: "Although many scientists who worked to create this weapon and many of the military who would have to use it opposed its use to some degree, the general public backed Truman in his decision to call for unconditional surrender. In a June 10th Gallup Poll, 82% of Americans surveyed stated that the Japanese were a more heartless country than the Germans (18%). Many felt that destroying one of Japan's cities with this new weapon would simply be retaliation for the devastating attack of Pearl Harbor which brought the United States into the war in December of 1941. With only 20% of Americans surveyed believing that the war would end by the end of 1945, the idea that a single weapon would bring a quick and definite end to the war in Japan also confirmed the belief held by Truman and his Cabinet that the atomic bomb should be used."

Author 2: "During World War II, President Truman had to make many difficult decisions regarding military matters, including, most importantly, the decision to utilize the new atomic bomb. In order to make these decisions, he looked to military authorities, his cabinet members, scientists and the views of the American public. Most of the American public, 80%, believed that the war would not end within the year 1945. Despite the objections of others, Truman felt he had the firm backing of the

general United States population and his Cabinet; he believed that the use of the atomic bomb would be justified in order to end the war quickly."

Which author discusses this statement: "More Americans thought that the Japanese were more heartless than the Germans as of June 10, 1945."?

CHOOSE ONE ANSWER.

- Author 1
- Author 2
- Both Author 1 and 2
- Neither Author 1 or 2

7 You wish to read a biography of Ben Franklin. Given the sources below, select the best place to begin your search.

CHOOSE ONE ANSWER.

- Library subscription electronic journal database
- Print encyclopedia
- Library subscription newspaper database
- Internet search engine such as Google
- Library online catalog

8 A friend forwards you an email asking you to write your senator to support a U.S. Senate bill that is before Congress. You are interested in the topic, but do not know much about the particular Senate bill. What would you do to determine the accuracy of this email before sending a letter to your senator?

CHOOSE ONE ANSWER.

- Ask your friend
- Review the bill at the U.S. Government Printing Office site
- Use a general search engine to research the bill

9 Often the book title will alert the researcher to bias. Based on the following book title, indicate the likelihood of bias in the book.

Giving up on Democracy: Why Term Limits are Bad for America

CHOOSE ONE ANSWER.

- Book is most likely biased
- Book is most likely unbiased.

10 Often the book title will alert the researcher to bias. Based on the following book title, indicate the likelihood of bias in the book.

Ethics: Discovering Right and Wrong

CHOOSE ONE ANSWER.

- Book is most likely biased
- Book is most likely unbiased.

Twelfth Grade Recognize how to use information responsibly, ethically, and legally

BACK

1 You are a producing a program at your school television station. The program covers student participation in a "Decades Day" project. It would be nice to use music from the different decades, but how much of an artists' recording can you use as background music? Choose the correct answer below:

CHOOSE ONE ANSWER.

- You may use up to 30 seconds but no more than 10 % of a recording.
- You may use up to 60% of the recording.
- You may not use any portion of the recording for you televised program unless you contact the record producer.
- You may use up to one minute but no more than 50% of the recording.

2 Your school library subscribes each year to an online photo database. As the editor of the school yearbook you have been searching for photos of current events to use as part of the yearbook. You decide that you will use some of the photos from the online photo database. Knowing that in your school students purchase their yearbook, which of the answers below correctly applies to the use of these photos in a school yearbook?

CHOOSE ONE ANSWER.

- You can use as many of the photos as you like as long as you give credit to the online photo database under each picture that you use.
- You may use as many of the photos as you like as long as you give credit to the

online photo database under each picture that you use and also include a "credits" page at the end of the yearbook that lists the name of the online photo database.

- You may not use any of the photos from the online database for the school yearbook because money is charged for the yearbook.

3 You are writing a history paper and want to include a quote from Abraham Lincoln that runs more than four lines in your paper. What is the correct way to place this long quote in the text of your paper?

CHOOSE ONE ANSWER.

- Put quotation marks around the quote followed by the parenthetical citation after the quotation marks.
- Start the quotation on a new line, omit quotation marks and follow the quote with the parenthetical citation after the closing punctuation mark.
- Start the quotation on a new line, omit quotation marks, indent one inch from the left margin and follow the quote with the parenthetical citation after the closing punctuation mark.
- Start the quotation on a new line, add quotation marks, indent one inch from the left margin and follow the quote with the parenthetical citation after the quotation mark.

4 A coed at a university wrote a paper for a sociology class about the link between poverty and voting in elections. This same coed has a paper due in her government class but she doesn't have much time to complete the government paper and feels that with a few changes, she can use the same paper for the government class. What might be the consequences of this decision?

CHOOSE ONE ANSWER.

- Nothing will happen to the coed. The paper was the student's original work and can be used without consequence.
- Since the coed did not intentionally intend to plagiarize by using the same paper in her government class, the professor will ask that she redo the paper and will receive a lower grade.
- The coed will receive a zero on her paper. Even though the paper is her original work, this is still considered plagiarism.

- The coed will have to meet with both professors and explain the differences in the two papers. The professors will determine whether or not the papers meet the requirements of their individual assignments.

5 To earn extra money as a college student you have begun a DJ business. You have created a website about your DJ business. You want to include some photographs of your work as the DJ at weddings on your website. You go to a wedding photographer's website and find some photos of yourself playing music and announcing the wedding party. You do not see a copyright notice and it would be easy to copy the photos to your site. You are undecided as to whether or not you can use the photographs. What can you do?

CHOOSE ONE ANSWER.

- Since the photographs do not have a copyright notice, the photographs are not copyrighted and may be used on your website.
- Since the photographs do not have a copyright notice, you can use the photographs and then add the name of the photographer and the URL from the photographer's website.
- Since almost all materials created privately and originally after April 1, 1989 are copyrighted and protected whether they have a copyright notice or not, you must seek permission from the photographer.

6 When information appears in several sources and most people know the information, it is considered common knowledge. You do not need to cite common knowledge used in a research paper. From the list of information examples below, choose the one that is **not** considered common knowledge.

CHOOSE ONE ANSWER.

- Arguably, one of the most difficult decisions of the presidency of John F. Kennedy was the one in which he averted nuclear war during the Cuban missile crisis.
- Surrounded by Indians, General Custer fought the battle of the Little Big Horn and lost.
- Franklin Pierce, 14th President of the United States, was born in 1804 and died in 1869.
- President Abraham Lincoln delivered the Emancipation Proclamation in January

of 1863 and freed the slaves.

7 You are using a direct quote for a paper about poverty and education. The exact quote is as follows, "Students living below the poverty level, from all regions of the United States, typically do not perform as well academically as students not living below the poverty level." From the three choices below, choose the correct way to cite the above text when words have been eliminated from the quote.

CHOOSE ONE ANSWER.

- "Students living below the poverty level … typically do not perform as well academically as students not living below the poverty level (Thomas, 23)."
- Students living below the poverty level [ ] typically do not perform as well as students not living below the poverty level. (Thomas, 23)
- "Students living below the poverty level … typically do not perform as well academically as students not living below the poverty level" (Thomas, 23).

8 You have been given an assignment in your literature class to paraphrase the ideas in a passage from an American author. You are having problems with the assignment because you do not know exactly what it means to paraphrase. From the choices below, choose the sentence that best describes the process of paraphrasing.

CHOOSE ONE ANSWER.

- Paraphrasing means to restate the idea of the excerpt or passage by changing a few words in the excerpt with synonyms.
- Paraphrasing means to restate the idea of the excerpt or passage in your own words. The paraphrase can be about the same length as or longer than the original excerpt.
- Paraphrasing means to restate the main ideas of excerpt or passage in your own words. It is very brief compared to the passage or excerpt.
- Paraphrasing means to use the exact words of the excerpt or passage and use quotation marks.

9 You are writing a research paper about advertising in the 1960's. You find online a reproduction of an advertisement that was first published in a magazine. You wish to use the reproduction in your research paper. What is the proper way to cite the reproduction within your paper using MLA style? Choose the correct answer from the list below:

CHOOSE ONE ANSWER.

- (Name of Product, Company, or Institution, Magazine name, page)
- (Name of Product, Magazine name, page)
- (Name of Product, Company, or Institution)
- (Name of Product, Company, or Institution, page)

10 A recent study of high school students done at a major university found that many of the students reported one or more instances of test cheating, one or more incidents of serious cheating on written work, and some level of plagiarism on written work taken from the Internet. As a student, you have been made aware of the consequences of any type of cheating in an academic setting. However, there are unintended consequences to students that choose to follow the principles of intellectual property. In the list below, find the one example of unintended consequences to the student that follows the principles of intellectual property.

CHOOSE ONE ANSWER.

- Choosing to follow the principles of intellectual property does not have any consequences.
- Choosing to follow the principles of intellectual property has the unintended consequence of not being able to write a good paper.
- Choosing to follow the principles of intellectual property has the unintended consequence of the student being outscored by peers that do cheat and/or plagiarize.
- Choosing to follow the principles of intellectual property has the unintended consequence of always trying to do the right thing and not being rewarded for making this choice.